

=> fil reg  
FILE 'REGISTRY' ENTERED AT 13:32:29 ON 07 JUL 2010  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2010 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file  
provided by InfoChem.

STRUCTURE FILE UPDATES: 6 JUL 2010 HIGHEST RN 1229166-13-5  
DICTIONARY FILE UPDATES: 6 JUL 2010 HIGHEST RN 1229166-13-5

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 8, 2010.

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and  
predicted properties as well as tags indicating availability of  
experimental property data in the original document. For information  
on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stndoc/properties.html>

=> fil hcap  
FILE 'HCAPLUS' ENTERED AT 13:32:31 ON 07 JUL 2010  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2010 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is  
held by the publishers listed in the PUBLISHER (PB) field (available  
for records published or updated in Chemical Abstracts after December  
26, 1996), unless otherwise indicated in the original publications.  
The CA Lexicon is the copyrighted intellectual property of the  
American Chemical Society and is provided to assist you in searching  
databases on STN. Any dissemination, distribution, copying, or storing  
of this information, without the prior written consent of CAS, is  
strictly prohibited.

FILE COVERS 1907 - 7 Jul 2010 VOL 153 ISS 2  
FILE LAST UPDATED: 6 Jul 2010 (20100706/ED)  
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Apr 2010  
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Apr 2010

HCAPlus now includes complete International Patent Classification (IPC)  
reclassification data for the second quarter of 2010.

CAS Information Use Policies apply and are available at:

<http://www.cas.org/legal/infopolicy.html>

This file contains CAS Registry Numbers for easy and accurate  
substance identification.

=> d que 164

L3 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 9012-76-4/RN  
 L4 2829 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON CHITOSAN?/CNS  
 L5 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 9000-69-5/RN  
 L6 2739 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON PECTIN?/CNS  
 L7 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON VANILLIN/CN  
 L8 544 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON VANILLIN?/CNS  
 L9 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 1135-24-6/RN  
 L10 5 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON FERULOYL?/CNS  
 L11 344 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON FERULOYL?/CNS  
 L13 3714 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON LIPID?/CNS  
 L14 35719 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L3  
 L15 39846 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L4  
 L16 20965 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L5  
 L17 37946 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L6  
 L18 15643 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L7  
 L19 26952 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L8  
 L20 10437 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L9 OR L10  
 L21 2611 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L11  
 L23 56086 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L13  
 L24 QUE SPE=ON ABB=ON PLU=ON LIPID? OR FAT# OR OIL# OR WA  
 X?  
 L25 QUE SPE=ON ABB=ON PLU=ON FERULOYL? OR FERULOYL? OR FER  
 ULIC ACID?  
 L26 QUE SPE=ON ABB=ON PLU=ON PECTIN#  
 L27 QUE SPE=ON ABB=ON PLU=ON CHITOSAN#  
 L28 88735 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON (L14 OR L15 OR  
 L16 OR L17) OR (L26 OR L27)  
 L29 244 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L28 AND (L18 OR  
 L19)  
 L30 240 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L28 AND VANILLIN?  
 L31 283 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON (L29 OR L30)  
 L32 44 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L31 AND ((L20 OR  
 L21) OR L25)  
 L33 8 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L32 AND (L23 OR  
 L24)  
 L34 11 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L32 AND FOOD?/SC,S  
 X  
 L35 2 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L33 AND FOOD?/SC,S  
 X  
 L37 11 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L34 OR L35  
 L44 9 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L37 AND (1840-2004  
 )/PRY,AY,PY  
 L45 390 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L28 AND ((L20 OR  
 L21) OR L25)  
 L46 143 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L45 AND FOOD?/SC,S  
 X  
 L48 66 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L46 AND FFD/RL  
 L49 54 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L48 AND FOOD?/SC  
 L50 21 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L49 AND (L23 OR  
 L24)  
 L51 20 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L50 AND (L16 OR  
 L17)  
 L52 6 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L51 AND (L14 OR  
 L15)  
 L53 6 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L52 AND (1840-2004  
 )/PRY,AY,PY  
 L54 13 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L44 OR L53  
 L55 1609 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L26 AND L27  
 L56 12 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L55 AND L25

```

L57      8 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L56 AND FOOD?/SC, S
        X
L58      6 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L57 AND (1840-2004
        )/PRY,AY,PY
L59     13 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L54 OR L58
L60     1767 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  PECTIN? AND
        CHITOSAN?
L61     14 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L60 AND (FERUOYL?
        OR FERULOYL? OR FERULIC?)
L62      6 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L61 AND VANILLIN?
L63      5 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L62 AND (1840-2004
        )/PRY,AY,PY
L64     15 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L59 OR L63

```

=> fil wpix

FILE 'WPIX' ENTERED AT 13:32:40 ON 07 JUL 2010  
 COPYRIGHT (C) 2010 THOMSON REUTERS

FILE LAST UPDATED: 2 JUL 2010 <20100702/UP>  
 MOST RECENT UPDATE: 201042 <201042/DW>  
 DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE  
 >>> Now containing more than 1.6 million chemical structures in DCR <<<

>>> IPC, ECLA, US National Classifications and Japanese F-Terms  
 and FI-Terms have been updated with reclassifications to  
 end of March 2010.  
 No update date (UP) has been created for the reclassified  
 documents, but they can be identified by  
 specific update codes (see HELP CLA for details) <<<

>>> FOR THE LATEST DERWENT WORLD PATENTS INDEX (DWPI)  
 STN USER DOCUMENTATION, PLEASE VISIT:  
[http://www.stn-international.com/stn\\_dwpi.html](http://www.stn-international.com/stn_dwpi.html) <<<

>>> HELP for European Patent Classifications see HELP ECLA, HELP ICO <<<

>>> For changes in DWPI see HELP CHANGE - last updated April 6, 2010 <<<

>>> New display format ALLSTR available - see NEWS <<<

>>> US National Patent Classification thesaurus added - see NEWS <<<

=> d que 196

```

L60     1767 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  PECTIN? AND
        CHITOSAN?
L65     14 SEA FILE=WPIX SPE=ON  ABB=ON  PLU=ON  L60 AND (FERUOYL? OR
        FERULOYL? OR FERULIC?)
L66     6 SEA FILE=WPIX SPE=ON  ABB=ON  PLU=ON  L65 AND (PY<=2004 OR
        AY<=2004 OR PRY<=2004)
L75     QUE SPE=ON  ABB=ON  PLU=ON  FERUOYL? OR FERULOYL? OR FER
        ULIC? OR FERULAT?
L79     135 SEA FILE=SCISEARCH SPE=ON  ABB=ON  PLU=ON  PECTIN? AND L75
L80     14 SEA FILE=SCISEARCH SPE=ON  ABB=ON  PLU=ON  CHITOSAN? AND
        VANILLIN?
L95     3 SEA FILE=WPIX SPE=ON  ABB=ON  PLU=ON  L79 AND L80
L96     7 SEA FILE=WPIX SPE=ON  ABB=ON  PLU=ON  L66 OR L95

```

=> fil japio

FILE 'JAPIO' ENTERED AT 13:32:54 ON 07 JUL 2010

COPYRIGHT (C) 2010 Japanese Patent Office (JPO)- JAPIO

FILE LAST UPDATED: 6 JUL 2010

<20100706/UP>

MOST RECENT PUBLICATION DATE: 25 MAR 2010

<20100325/PD>

>>> GRAPHIC IMAGES AVAILABLE <<<

>>> SIMULTANEOUS LEFT AND RIGHT TRUNCATION (SLART) IS AVAILABLE  
IN THE BASIC INDEX (/BI) FIELD <<<

=> d que 194

L60 1767 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON PECTIN? AND  
CHITOSAN?  
L65 14 SEA FILE=WPIX SPE=ON ABB=ON PLU=ON L60 AND (FERUOYL? OR  
FERULOYL? OR FERULIC?)  
L67 0 SEA FILE=JAPIO SPE=ON ABB=ON PLU=ON L65 AND (PY<=2004  
OR AY<=2004 OR PRY<=2004)  
L75 QUE SPE=ON ABB=ON PLU=ON FERUOYL? OR FERULOYL? OR FER  
ULIC? OR FERULAT?  
L79 135 SEA FILE=SCISEARCH SPE=ON ABB=ON PLU=ON PECTIN? AND L75  
L80 14 SEA FILE=SCISEARCH SPE=ON ABB=ON PLU=ON CHITOSAN? AND  
VANILLIN?  
L93 0 SEA FILE=JAPIO SPE=ON ABB=ON PLU=ON L79 AND L80  
L94 0 SEA FILE=JAPIO SPE=ON ABB=ON PLU=ON L67 OR L93

=> fil frosti

FILE 'FROSTI' ENTERED AT 13:33:03 ON 07 JUL 2010

COPYRIGHT (C) 2010 Leatherhead Food Research Association

FILE LAST UPDATED: 30 JUN 2010

<20100630/UP>

FILE COVERS 1972 TO DATE.

>>> SIMULTANEOUS LEFT AND RIGHT TRUNCATION IS AVAILABLE  
IN THE BASIC INDEX (/BI) FIELD <<<

=> d que 192

L60 1767 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON PECTIN? AND  
CHITOSAN?  
L65 14 SEA FILE=WPIX SPE=ON ABB=ON PLU=ON L60 AND (FERUOYL? OR  
FERULOYL? OR FERULIC?)  
L68 0 SEA FILE=FROSTI SPE=ON ABB=ON PLU=ON L65 AND (PY<=2004  
OR AY<=2004 OR PRY<=2004)  
L75 QUE SPE=ON ABB=ON PLU=ON FERUOYL? OR FERULOYL? OR FER  
ULIC? OR FERULAT?  
L79 135 SEA FILE=SCISEARCH SPE=ON ABB=ON PLU=ON PECTIN? AND L75  
L80 14 SEA FILE=SCISEARCH SPE=ON ABB=ON PLU=ON CHITOSAN? AND  
VANILLIN?  
L91 0 SEA FILE=FROSTI SPE=ON ABB=ON PLU=ON L79 AND L80  
L92 0 SEA FILE=FROSTI SPE=ON ABB=ON PLU=ON L68 OR L91

=> fil agricola

FILE 'AGRICOLA' ENTERED AT 13:33:13 ON 07 JUL 2010

FILE COVERS 1970 TO 7 Jun 2010 (20100607/ED)

Compiled and distributed by the National Agricultural Library  
of the Department of Agriculture of the United States of  
America. It contains copyrighted material. All rights  
reserved. (2010)

This file contains CAS Registry Numbers for easy and accurate  
substance identification.

```
=> d que 190
L60      1767 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON PECTIN? AND
          CHITOSAN?
L65      14 SEA FILE=WPIX SPE=ON ABB=ON PLU=ON L60 AND (FERUOYL? OR
          FERULOYL? OR FERULIC?)
L69      0 SEA FILE=AGRICOLA SPE=ON ABB=ON PLU=ON L65 AND (PY<=2004
          OR AY<=2004 OR PRY<=2004)
L75      QUE SPE=ON ABB=ON PLU=ON FERUOYL? OR FERULOYL? OR FER
          ULIC? OR FERULAT?
L79      135 SEA FILE=SCISEARCH SPE=ON ABB=ON PLU=ON PECTIN? AND L75
L80      14 SEA FILE=SCISEARCH SPE=ON ABB=ON PLU=ON CHITOSAN? AND
          VANILLIN?
L89      0 SEA FILE=AGRICOLA SPE=ON ABB=ON PLU=ON L79 AND L80
L90      0 SEA FILE=AGRICOLA SPE=ON ABB=ON PLU=ON L69 OR L89
```

```
=> fil pascal
FILE 'PASCAL' ENTERED AT 13:33:20 ON 07 JUL 2010
Any reproduction or dissemination in part or in full,
by means of any process and on any support whatsoever
is prohibited without the prior written agreement of INIST-CNRS.
COPYRIGHT (C) 2010 INIST-CNRS. All rights reserved.
```

```
FILE LAST UPDATED: 5 JUL 2010      <20100705/UP>
FILE COVERS 1977 TO DATE.
```

```
>>> SIMULTANEOUS LEFT AND RIGHT TRUNCATION IS AVAILABLE
      IN THE BASIC INDEX (/BI) FIELD <<<
```

```
=> d que 188
L60      1767 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON PECTIN? AND
          CHITOSAN?
L70      0 SEA FILE=PASCAL SPE=ON ABB=ON PLU=ON L60 AND (FERUOYL?
          OR FERULOYL? OR FERULIC?)
L75      QUE SPE=ON ABB=ON PLU=ON FERUOYL? OR FERULOYL? OR FER
          ULIC? OR FERULAT?
L79      135 SEA FILE=SCISEARCH SPE=ON ABB=ON PLU=ON PECTIN? AND L75
L80      14 SEA FILE=SCISEARCH SPE=ON ABB=ON PLU=ON CHITOSAN? AND
          VANILLIN?
L87      0 SEA FILE=PASCAL SPE=ON ABB=ON PLU=ON L79 AND L80
L88      0 SEA FILE=PASCAL SPE=ON ABB=ON PLU=ON L87 OR L70
```

```
=> fil biosis
FILE 'BIOSIS' ENTERED AT 13:33:29 ON 07 JUL 2010
Copyright (c) 2010 The Thomson Corporation
```

FILE COVERS 1926 TO DATE.  
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT  
FROM JANUARY 1926 TO DATE.

RECORDS LAST ADDED: 1 July 2010 (20100701/ED)

BIOSIS has been augmented with 1.8 million archival records from 1926 through 1968. These records have been re-indexed to match current BIOSIS indexing.

=> d que 186

```
L60      1767 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  PECTIN? AND
          CHITOSAN?
L71      0 SEA FILE=BIOSIS SPE=ON  ABB=ON  PLU=ON  L60 AND (FERUOYL?
          OR FERULOYL? OR FERULIC?)
L75      QUE SPE=ON  ABB=ON  PLU=ON  FERUOYL? OR FERULOYL? OR FER
          ULIC? OR FERULAT?
L79      135 SEA FILE=SCISEARCH SPE=ON  ABB=ON  PLU=ON  PECTIN? AND L75
L80      14 SEA FILE=SCISEARCH SPE=ON  ABB=ON  PLU=ON  CHITOSAN? AND
          VANILLIN?
L85      0 SEA FILE=BIOSIS SPE=ON  ABB=ON  PLU=ON  L79 AND L80
L86      0 SEA FILE=BIOSIS SPE=ON  ABB=ON  PLU=ON  L85 OR L71
```

=> fil dissabs

FILE 'DISSABS' ENTERED AT 13:33:47 ON 07 JUL 2010  
COPYRIGHT (C) 2010 ProQuest Information and Learning Company; All Rights Reserved.

FILE COVERS 1861 TO 2 JUL 2010 (20100702/ED)

Only fair use as provided by the United States copyright law is permitted. PROQUEST INFORMATION AND LEARNING COMPANY MAKES NO WARRANTY REGARDING THE ACCURACY, COMPLETENESS OR TIMELINESS OF THE LICENSED MATERIALS OR ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND SHALL NOT BE LIABLE FOR DAMAGES OF ANY KIND OR LOST PROFITS OR OTHER CLAIMS RELATED TO THE LICENSED MATERIALS OR THEIR USE.

=> d que 184

```
L60      1767 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  PECTIN? AND
          CHITOSAN?
L72      0 SEA FILE=DISSABS SPE=ON  ABB=ON  PLU=ON  L60 AND (FERUOYL?
          OR FERULOYL? OR FERULIC?)
L75      QUE SPE=ON  ABB=ON  PLU=ON  FERUOYL? OR FERULOYL? OR FER
          ULIC? OR FERULAT?
L79      135 SEA FILE=SCISEARCH SPE=ON  ABB=ON  PLU=ON  PECTIN? AND L75
L80      14 SEA FILE=SCISEARCH SPE=ON  ABB=ON  PLU=ON  CHITOSAN? AND
          VANILLIN?
L83      0 SEA FILE=DISSABS SPE=ON  ABB=ON  PLU=ON  L79 AND L80
L84      0 SEA FILE=DISSABS SPE=ON  ABB=ON  PLU=ON  L83 OR L72
```

=> fil scisearch

FILE 'SCISEARCH' ENTERED AT 13:33:55 ON 07 JUL 2010  
Copyright (c) 2010 The Thomson Corporation

FILE COVERS 1974 TO 1 Jul 2010 (20100701/ED)

SCISEARCH has been reloaded, see HELP RLOAD for details.

=> d que 182

```
L60      1767 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  PECTIN? AND
          CHITOSAN?
L73      3 SEA FILE=SCISEARCH SPE=ON  ABB=ON  PLU=ON  L60 AND
          (FERUOYL? OR FERULOYL? OR FERULIC?)
L75      QUE SPE=ON  ABB=ON  PLU=ON  FERUOYL? OR FERULOYL? OR FER
          ULIC? OR FERULAT?
L79      135 SEA FILE=SCISEARCH SPE=ON  ABB=ON  PLU=ON  PECTIN? AND L75
L80      14 SEA FILE=SCISEARCH SPE=ON  ABB=ON  PLU=ON  CHITOSAN? AND
          VANILLIN?
L81      0 SEA FILE=SCISEARCH SPE=ON  ABB=ON  PLU=ON  L79 AND L80
L82      3 SEA FILE=SCISEARCH SPE=ON  ABB=ON  PLU=ON  L73 OR L81
```

=> fil confsci

FILE 'CONFSCI' ENTERED AT 13:34:03 ON 07 JUL 2010

COPYRIGHT (C) 2010 Cambridge Scientific Abstracts (CSA)

FILE COVERS 1973 TO 21 May 2010 (20100521/ED)

CSA has resumed updates, see NEWS FILE

=> d que 178

```
L60      1767 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  PECTIN? AND
          CHITOSAN?
L74      0 SEA FILE=CONFSCI SPE=ON  ABB=ON  PLU=ON  L60 AND (FERUOYL?
          OR FERULOYL? OR FERULIC?)
L75      QUE SPE=ON  ABB=ON  PLU=ON  FERUOYL? OR FERULOYL? OR FER
          ULIC? OR FERULAT?
L76      0 SEA FILE=CONFSCI SPE=ON  ABB=ON  PLU=ON  PECTIN? AND L75
L77      0 SEA FILE=CONFSCI SPE=ON  ABB=ON  PLU=ON  CHITOSAN? AND
          VANILLIN?
L78      0 SEA FILE=CONFSCI SPE=ON  ABB=ON  PLU=ON  L74 OR (L76 OR
          L77)
```

=> dup rem 164 196 194 192 190 188 186 184 182 178

```
L94 HAS NO ANSWERS
L92 HAS NO ANSWERS
L90 HAS NO ANSWERS
L88 HAS NO ANSWERS
L86 HAS NO ANSWERS
L84 HAS NO ANSWERS
L78 HAS NO ANSWERS
```

FILE 'HCAPLUS' ENTERED AT 13:34:36 ON 07 JUL 2010

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

COPYRIGHT (C) 2010 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'WPIX' ENTERED AT 13:34:36 ON 07 JUL 2010

COPYRIGHT (C) 2010 THOMSON REUTERS

FILE 'SCISEARCH' ENTERED AT 13:34:36 ON 07 JUL 2010

Copyright (c) 2010 The Thomson Corporation

PROCESSING COMPLETED FOR L64  
 PROCESSING COMPLETED FOR L96  
 PROCESSING COMPLETED FOR L94  
 PROCESSING COMPLETED FOR L92  
 PROCESSING COMPLETED FOR L90  
 PROCESSING COMPLETED FOR L88  
 PROCESSING COMPLETED FOR L86  
 PROCESSING COMPLETED FOR L84  
 PROCESSING COMPLETED FOR L82  
 PROCESSING COMPLETED FOR L78  
 L97 24 DUP REM L64 L96 L94 L92 L90 L88 L86 L84 L82 L78 (1 DUPLICATE  
 REMOVED)  
 ANSWERS '1-15' FROM FILE HCAPLUS  
 ANSWERS '16-21' FROM FILE WPIX  
 ANSWERS '22-24' FROM FILE SCISEARCH

=> d 1-15 ibib ed abs hitstr hitind

L97 ANSWER 1 OF 24 HCAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 1  
 ACCESSION NUMBER: 2005:612036 HCAPLUS Full-text  
 DOCUMENT NUMBER: 143:132237  
 TITLE: Edible moisture and flavor barrier comprising a  
 crosslinked biopolymer and a lipid for  
 food products  
 INVENTOR(S): Bevers, Loes Elizabeth; Bouwens, Elisabeth  
 Cornelia Maria; Van der Hijden, Hendrikus  
 Theodorus Wilhelmus Maria; Ravestein, Peter  
 PATENT ASSIGNEE(S): Unilever N. V., Neth.; Unilever PLC; Hindustan  
 Lever Limited  
 SOURCE: PCT Int. Appl., 36 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005063059	A1	20050714	WO 2004-EP13327	20041123
<--				
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MM, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2004308061	A1	20050714	AU 2004-308061	20041123
<--				
AU 2004308061	B2	20080911		
CA 2546661	A1	20050714	CA 2004-2546661	20041123
<--				
EP 1699304	A1	20060913	EP 2004-798066	20041123
<--				
EP 1699304	B1	20080917		



10/583,421

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,  
PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS

BR 2004016722	A	20070116	BR 2004-16722	20041123
			<--	
ZA 2006004294	A	20071031	ZA 2006-4294	20041123
			<--	
AT 408350	T	20081015	AT 2004-798066	20041123
			<--	
ES 2313100	T3	20090301	ES 2004-798066	20041123
			<--	
US 20070166437	A1	20070719	US 2006-583421	20060619
			<--	
IN 2006MN00738	A	20070323	IN 2006-MN738	20060623
			<--	
IN 229747	A1	20090327		
PRIORITY APPLN. INFO.:			EP 2003-79171	A 20031223
			<--	
			WO 2004-EP13327	W 20041123
			<--	

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

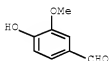
ED Entered STN: 15 Jul 2005

AB An edible barrier suitable for use in food products, comprising a cross-linked biopolymer and a lipid film material, said edible barrier having a thickness of about 2 to 1,500  $\mu$ m, effectively reduces migration of moisture and flavor in food products.

IT 121-33-5D, Vanillin, hydrocolloid biopolymers containing 1135-24-6D, Ferulic acid, hydrocolloid biopolymers containing 9000-69-5, Pectin 9001-62-1, Novozym 435 9012-76-4, Chitosan 9012-76-4D, Chitosan, reaction with vanillin 134633-83-3, Pectinex Ultra SPL (edible moisture and flavor barrier comprising a crosslinked biopolymer and a lipid film for food products)

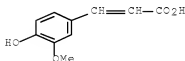
RN 121-33-5 HCAPLUS

CN Benzaldehyde, 4-hydroxy-3-methoxy- (CA INDEX NAME)



RN 1135-24-6 HCAPLUS

CN 2-Propenoic acid, 3-(4-hydroxy-3-methoxyphenyl)- (CA INDEX NAME)



RN 9000-69-5 HCAPLUS

CN Pectin (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9001-62-1 HCAPLUS

CN Lipase, triacylglycerol (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9012-76-4 HCAPLUS

CN Chitosan (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9012-76-4 HCAPLUS

CN Chitosan (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 134633-83-3 HCAPLUS

CN Pectinex Ultra SPL (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IPCI A23P0001-08 [ICM,7]

IPCR A21D0013-00 [I,C\*]; A21D0013-00 [I,A]; A21D0015-00 [I,C\*]; A21D0015-08 [I,A]; A23B0007-00 [I,C\*]; A23B0007-16 [I,A]; A23L0001-00 [I,C\*]; A23L0001-00 [I,A]; A23L0001-325 [I,C\*]; A23L0001-325 [I,A]

CC 17-4 (Food and Feed Chemistry)

ST food moisture flavor barrier crosslinked biopolymer lipid

IT Sunflower oil

(Cotabar A; edible moisture and flavor barrier comprising a crosslinked biopolymer and a lipid film for food products)

IT Fats and Glyceridic oils, biological studies

(RPLE70; edible moisture and flavor barrier comprising a crosslinked biopolymer and a lipid film for food products)

IT Hydrocolloids

(biopolymers containing ortho-methoxyphenol groups; edible moisture and flavor barrier comprising a crosslinked biopolymer and a lipid film for food products)

IT Bakery products

(biscuits; edible moisture and flavor barrier comprising a crosslinked biopolymer and a lipid film for food products)

IT Biopolymers

(crosslinked, films; edible moisture and flavor barrier comprising a crosslinked biopolymer and a lipid film for food products)

IT Beeswax

Bread

Emulsifying agents

Fish

Flavor

Food functional properties

Food processing

Fruit

Lycopersicon esculentum

Oxidation

Permeability

Vegetable

Water vapor

(edible moisture and flavor barrier comprising a crosslinked biopolymer and a lipid film for food products)

IT Carnauba wax

- Coconut oil
- Enzymes, biological studies
- Olive oil
- Sterols
- Sunflower oil
  - (edible moisture and flavor barrier comprising a crosslinked biopolymer and a lipid film for food products)
- IT Proteins
  - (egg; edible moisture and flavor barrier comprising a crosslinked biopolymer and a lipid film for food products)
- IT Glycerides, biological studies
  - (feruloylated; edible moisture and flavor barrier comprising a crosslinked biopolymer and a lipid film for food products)
- IT Lipids, biological studies
  - (films; edible moisture and flavor barrier comprising a crosslinked biopolymer and a lipid film for food products)
- IT Fats and Glyceridic oils, biological studies
  - (flakes, PO58; edible moisture and flavor barrier comprising a crosslinked biopolymer and a lipid film for food products)
- IT Food gels
  - (hydrophobic; edible moisture and flavor barrier comprising a crosslinked biopolymer and a lipid film for food products)
- IT Coating materials
  - (impermeable; edible moisture and flavor barrier comprising a crosslinked biopolymer and a lipid film for food products)
- IT Meat
  - (sausage, salami; edible moisture and flavor barrier comprising a crosslinked biopolymer and a lipid film for food products)
- IT Caseins, biological studies
  - (sodium complexes; edible moisture and flavor barrier comprising a crosslinked biopolymer and a lipid film for food products)
- IT Fats and Glyceridic oils, biological studies
  - (solid, MGLA41; edible moisture and flavor barrier comprising a crosslinked biopolymer and a lipid film for food products)
- IT Food
  - (spreads, cheese-yeast extract or -vegetable protein hydrolyzate; edible moisture and flavor barrier comprising a crosslinked biopolymer and a lipid film for food products)
- IT Caseins, biological studies
  - Proteins
    - (vanillin-coupled; edible moisture and flavor barrier comprising a crosslinked biopolymer and a lipid film for food products)
- IT Protein hydrolyzates
  - (vegetable; edible moisture and flavor barrier comprising a crosslinked biopolymer and a lipid film for food products)
- IT Cheese
  - (yeast extract-containing spread; edible moisture and flavor barrier comprising a crosslinked biopolymer and a lipid film for food products)
- IT 50-99-7, D-Glucose, biological studies    83-46-5,  $\beta$ -Sitosterol  
 90-05-1D, o-Methoxyphenol, hydrocolloid biopolymers containing

121-33-5D, Vanillin, hydrocolloid biopolymers containing  
 121-33-5D, Vanillin, reaction with chitosan  
 1135-24-6D, Ferulic acid, hydrocolloid  
 biopolymers containing 4046-02-0, Ethyl ferulate 9000-69-5,  
 Pectin 9001-37-0, Glucose oxidase 9001-62-1,  
 Novozym 435 9003-99-0, Biobake wheat 9012-76-4,  
 Chitosan 9012-76-4D, Chitosan, reaction  
 with vanillin 11042-64-1,  $\gamma$ -Oryzanol 83589-62-2,  
 Gelbond 117628-88-3, Hymono 8903 134633-83-3,  
 Pectinex Ultra SPL  
 (edible moisture and flavor barrier comprising a crosslinked  
 biopolymer and a lipid film for food products)  
 IT 7722-84-1, Hydrogen peroxide, biological studies  
 (tomato; edible moisture and flavor barrier comprising a  
 crosslinked biopolymer and a lipid film for food  
 products)  
 REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
 RE FORMAT  
 L97 ANSWER 2 OF 24 HCAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 2005:612035 HCAPLUS Full-text  
 DOCUMENT NUMBER: 143:132236  
 TITLE: Process for preparing an edible moisture and  
 flavor barrier for food products  
 INVENTOR(S): Bouwens, Elisabeth Cornelia Maria; Van der Hijden,  
 Hendrikus Theodorus Wilhelmus Maria  
 PATENT ASSIGNEE(S): Unilever N. V., Neth.; Unilever PLC; Hindustan  
 Lever Limited  
 SOURCE: PCT Int. Appl., 15 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005063057	A1	20050714	WO 2004-EP13654	20041123
<--				
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2004308066	A1	20050714	AU 2004-308066	20041123
<--				
AU 2004308066	B2	20080925		
CA 2546779	A1	20050714	CA 2004-2546779	20041123
<--				
EP 1696748	A1	20060906	EP 2004-803416	20041123
<--				
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,				

PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS  
 BR 2004016714 A 20070116 BR 2004-16714 20041123  
 <--  
 US 20070141209 A1 20070621 US 2006-583680 20060619  
 <--  
 IN 2006MN00741 A 20070413 IN 2006-MN741 20060623  
 <--  
 PRIORITY APPLN. INFO.: EP 2003-79173 A 20031223  
 <--  
 WO 2004-EP13654 W 20041123  
 <--

## ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

ED Entered STN: 15 Jul 2005

AB The invention relates to a method of preparing of an edible barrier for water and/or flavor transport, including oil transport in a food product wherein a feruloylated compound is at least partly oxidized after applying it to the food product. The barrier is especially useful in food products comprising leaking (moisture or flavor or oil) ingredients such as vegetables (tomato, salad), fruit, bread or fish.

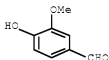
IT 121-33-5D, Vanillin, polymers containing

1135-24-6, Ferulic acid

(process for preparing an edible moisture and flavor and oil barrier for food products)

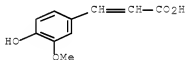
RN 121-33-5 HCAPLUS

CN Benzaldehyde, 4-hydroxy-3-methoxy- (CA INDEX NAME)



RN 1135-24-6 HCAPLUS

CN 2-Propenoic acid, 3-(4-hydroxy-3-methoxyphenyl)- (CA INDEX NAME)



IT 9000-69-5D, Pectin, feruloylated

9012-76-4D, Chitosan, feruloylated

(process for preparing an edible moisture and flavor and oil barrier for food products)

RN 9000-69-5 HCAPLUS

CN Pectin (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9012-76-4 HCAPLUS

CN Chitosan (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IPCI A23L0003-00 [ICM,7]; A23B0007-00 [ICS,7]; A23B0004-00 [ICS,7];  
 A23L0001-0524 [ICS,7]; A23L0001-052 [ICS,7,C\*]  
 IPCR A21D0002-00 [I,C\*]; A21D0002-00 [I,A]; A21D0015-00 [I,C\*]; A21D0015-00  
 [I,A]; A23B0004-00 [I,C\*]; A23B0004-00 [I,A]; A23B0007-00 [I,C\*];  
 A23B0007-00 [I,A]; A23B0007-16 [I,A]; A23L0001-00 [I,C\*]; A23L0001-00  
 [I,A]; A23L0001-05 [I,C\*]; A23L0001-052 [I,C\*]; A23L0001-0524 [I,A];  
 A23L0001-056 [I,A]; A23L0001-212 [I,C\*]; A23L0001-212 [I,A];  
 A23L0001-325 [I,C\*]; A23L0001-325 [I,A]; A23L0003-00 [I,C\*];  
 A23L0003-00 [I,A]  
 CC 17-4 (Food and Feed Chemistry)  
 ST food product tomato salmon bread moisture flavor oil  
 barrier; water flavor barrier food vegetable fruit bread fish  
 IT Coating materials  
 (impermeable; process for preparing an edible moisture and flavor and  
 oil barrier for food products)  
 IT Bread  
 Fish  
 Flavor  
 Food processing  
 Fruit  
 Oxidation  
 Oxidation  
 Vegetable  
 Water vapor  
 (process for preparing an edible moisture and flavor and oil  
 barrier for food products)  
 IT Enzymes, biological studies  
 (process for preparing an edible moisture and flavor and oil  
 barrier for food products)  
 IT Vegetable  
 (salad materials; process for preparing an edible moisture and flavor  
 and oil barrier for food products)  
 IT Bread  
 (sandwiches containing salmon and tomato; process for preparing an edible  
 moisture and flavor and oil barrier for food products)  
 IT Lycopersicon esculentum  
 (sliced; process for preparing an edible moisture and flavor and  
 oil barrier for food products)  
 IT Salmon  
 (smoked; process for preparing an edible moisture and flavor and  
 oil barrier for food products)  
 IT 50-99-7, Glucose, biological studies 121-33-5D,  
 Vanillin, polymers containing 127-09-3, Sodium acetate  
 1135-24-6, Ferulic acid 7722-84-1,  
 Hydrogen peroxide, biological studies 9003-99-0, Biobake Wheat  
 9074-19-5, Hydrase  
 (process for preparing an edible moisture and flavor and oil  
 barrier for food products)  
 IT 9090-69-5D, Pectin, feruloylated  
 9012-76-4D, Chitosan, feruloylated  
 (process for preparing an edible moisture and flavor and oil  
 barrier for food products)  
 REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
 RE FORMAT

L97 ANSWER 3 OF 24 HCAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 2005:564598 HCAPLUS [Full-text](#)  
 DOCUMENT NUMBER: 143:77319  
 TITLE: Continuous multi-microencapsulation process for

improving the stability and storage life of  
biologically active ingredients in foods,  
cosmetics and drugs

INVENTOR(S): Casana Giner, Victor; Gimeno Sierra, Miguel;

PATENT ASSIGNEE(S): Gimeno Sierra, Barbara; Moser, Martha

SOURCE: GAT Formulation G.m.b.H., Austria

PCT Int. Appl., 72 pp.

CODEN: PIXXD2

DOCUMENT TYPE:

Patent

LANGUAGE:

Spanish

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005058476	A1	20050630	WO 2004-ES562	20041217
<--				
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
ES 2235642	A1	20050701	ES 2003-2998	20031218
<--				
ES 2235642	B2	20060301		
AU 2004298792	A1	20050630	AU 2004-298792	20041217
<--				
CA 2550615	A1	20050630	CA 2004-2550615	20041217
<--				
EP 1702675	A1	20060920	EP 2004-805105	20041217
<--				
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS				
CN 1917946	A	20070221	CN 2004-80041872	20041217
<--				
CN 100566812	C	20091209		
BR 2004017767	A	20070417	BR 2004-17767	20041217
<--				
JP 2007521135	T	20070802	JP 2006-544472	20041217
<--				
MX 2006006735	A	20070216	MX 2006-6735	20060614
<--				
US 20070077308	A1	20070405	US 2006-596556	20060616
<--				
US 20080102132	A2	20080501		
PRIORITY APPLN. INFO.:			ES 2003-2998	A 20031218
<--				
			WO 2004-ES562	W 20041217
<--				

ED Entered STN: 30 Jun 2005

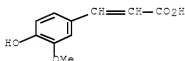
AB Microcapsules are obtained in a continuous water-in-oil -in-water microencapsulation process through in situ and interfacial polymerization of the emulsion. A formulation comprises a continuous water phase having a

dispersion of microcapsules which contain oil drops and in the inside of each oil phase drop (containing optionally oil-soluble materials) there is a dispersion of water, or aqueous extract or water-dispersible material or water-soluble material. The oil drops are encapsulated with a polymerizable material of natural origin. Such microcapsules are appropriate for spray-drying, to be used as dry powder, lyophilized, self-emulsifiable powder, gel, cream, and any liquid form. The active compds. included in the microcapsules are beneficial to health and other biol. purposes. Such formulations are appropriate for incorporation in any class of food, especially for the production of nutraceuticals, as well as cosmetic products (such as rejuvenescence creams, anti-wrinkle creams, gels, bath and shower consumable products and sprays). The preps. are adequate to stabilize compds. added to food, media for cultivating microbes and nutraceuticals, especially those which are easily degradable or oxidizable.

IT 1135-24-6 9000-69-5, Pectin  
9012-76-4, Chitosan  
(continuous multi-microencapsulation process for improving  
stability and storage life of biol. active ingredients in foods,  
cosmetics and drugs)

RN 1135-24-6 HCAPLUS

CN 2-Propenoic acid, 3-(4-hydroxy-3-methoxyphenyl)- (CA INDEX NAME)



RN 9000-69-5 HCAPLUS

CN Pectin (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9012-76-4 HCAPLUS

CN Chitosan (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 9001-62-1  
(inhibitors; continuous multi-microencapsulation process for  
improving stability and storage life of biol. active ingredients in  
foods, cosmetics and drugs)

RN 9001-62-1 HCAPLUS

CN Lipase, triacylglycerol (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IPCI B01J0013-16 [ICM,7]; B01J0013-06 [ICM,7,C\*]

IPCR B01J0013-06 [I,C\*]; B01J0013-18 [I,A]

CC 17-4 (Food and Feed Chemistry)  
Section cross-reference(s): 62, 63

IT Albumins, biological studies  
Amides, biological studies  
Amines, biological studies  
Amino acids, biological studies  
Carbohydrates, biological studies  
Carotenes, biological studies  
Chlorophylls, biological studies  
Diglycerides  
Diterpenes



Enzyme inhibitors  
 Enzymes, biological studies  
 Ethers, biological studies  
   Fats and Glyceridic oils, biological studies  
 Flavonoids  
 Gelatins, biological studies  
 Glycerides, biological studies  
 Hormones, animal, biological studies  
 Linseed oil  
 Mineral elements, biological studies  
 Monoterpenes  
 Myelin  
 Oligosaccharides, biological studies  
 Phenols, biological studies  
 Phospholipids, biological studies  
 Phytoestrogens  
 Polysaccharides, biological studies  
 Proanthocyanidins  
 Saponins  
 Sesquiterpenes  
 Sphingolipids  
 Tannins  
 Terpenes, biological studies  
 Tocopherols  
 Trace element nutrients  
 Triterpenes  
 Vitamins  
   Waxes  
     (continuous multi-microencapsulation process for improving  
       stability and storage life of biol. active ingredients in foods,  
       cosmetics and drugs)  
 IT Fats and Glyceridic oils, biological studies  
   (hydrogenated; continuous multi-microencapsulation process for  
   improving stability and storage life of biol. active ingredients in  
   foods, cosmetics and drugs)  
 IT Emulsions  
   (water-in-oil-in-water, p; continuous  
   multi-microencapsulation process for improving stability and  
   storage life of biol. active ingredients in foods, cosmetics and  
   drugs)  
 IT 50-81-7, L-Ascorbic acid, biological studies 52-90-4, L-Cysteine,  
   biological studies 56-89-3, L-Cystine, biological studies 59-02-9  
   60-33-3, 9,12-Octadecadienoic acid (9Z,12Z)-, biological studies  
   64-17-5, Ethanol, biological studies 70-18-8, biological studies  
   73-31-4 74-79-3, L-Arginine, biological studies 83-88-5,  
   Riboflavin, biological studies 88-26-6 90-05-1 90-19-7 94-41-7  
   95-48-7, biological studies 99-50-3 99-96-7, biological studies  
   106-44-5, biological studies 108-39-4, biological studies 111-02-4  
   112-80-1, 9-Octadecenoic acid (9Z)-, biological studies 117-39-5  
   119-13-1 121-34-6 123-07-9 126-29-4 128-37-0, biological  
   studies 134-04-3 144-68-3 146-48-5 148-03-8 149-91-7,  
   biological studies 153-18-4 154-23-4 303-98-0 305-84-0  
   327-97-9 331-39-5 432-70-2,  $\beta$ , $\epsilon$ -Carotene 446-72-0  
   463-40-1 465-42-9 469-38-5 472-61-7 480-17-1 480-18-2  
   480-19-3 480-40-0 480-41-1 486-66-8 490-23-3 490-46-0  
   491-70-3 491-80-5 506-26-3 506-32-1 514-78-3,  
    $\beta$ , $\beta$ -Carotene-4,4'-dione 520-18-3 520-26-3 520-33-2  
   520-34-3 520-36-5 522-12-3 528-48-3 529-44-2 530-57-4  
   530-59-6 531-95-3 541-15-1 548-83-4 552-58-9 580-72-3  
   583-17-5 588-30-7 863-03-6 970-74-1 989-51-5

1135-24-6 1151-98-0 1154-78-5 1200-22-2 1406-18-4,  
 Vitamin E 1421-63-2 1721-51-3 1783-84-2 1912-50-1 1948-33-0  
 2444-28-2 6217-54-5 7235-40-7,  $\beta$ , $\beta$ -Carotene 7400-08-0  
 7439-95-4, Magnesium, biological studies 7440-66-6, Zinc, biological  
 studies 7616-22-0 7647-14-5, Sodium chloride (NaCl), biological  
 studies 7782-49-2, Selenium, biological studies 7786-61-0  
 8013-90-9, Ionone 8062-15-5, Lignosulfonate 8063-16-9, Psyllium  
 gum 9000-01-5, Gum arabic 9000-07-1, Carrageenan 9000-30-0, Guar  
 gum 9000-36-6, Karaya gum 9000-65-1, Gum tragacanth  
 9800-69-5, Pectin 9002-18-0, Agar 9004-34-6,  
 Cellulose, biological studies 9004-53-9, Dextrin 9005-25-8,  
 Starch, biological studies 9005-32-7, Alginic acid 9005-53-2,  
 Lignin, biological studies 9005-80-5, Inulin 9012-76-4,  
 Chitosan 9036-66-2, Arabinogalactan 9041-22-9,  
 $\beta$ -Glucan 10028-15-6, Ozone, biological studies 10236-47-2  
 10417-94-4 10597-60-1 11078-30-1, Galactomannan 11138-66-2,  
 Xanthan gum 12619-70-4, Cyclodextrin 12676-20-9, Apocarotenal  
 13463-28-0 13920-14-4 14101-61-2 14259-46-2 14660-91-4  
 17912-87-7 20290-75-9 21255-69-6 23290-26-8 24897-98-1  
 25013-16-5 25429-38-3 25612-59-3 26161-42-2 27785-15-5  
 29388-59-8 31661-06-0 32619-42-4 32839-34-2 33135-50-1,  
 Poly-L-lactide 55167-29-8 58749-22-7 59870-68-7 78473-71-9  
 80226-00-2

(continuous multi-microencapsulation process for improving  
 stability and storage life of biol. active ingredients in foods,  
 cosmetics and drugs)

IT 9001-62-1 9002-10-2 9003-99-0, Peroxidase 9029-60-1  
 9037-29-0, Oxygenase

(inhibitors; continuous multi-microencapsulation process for  
 improving stability and storage life of biol. active ingredients in  
 foods, cosmetics and drugs)

OS.CITING REF COUNT: 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS  
 RECORD (8 CITINGS)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
 RE FORMAT

L97 ANSWER 4 OF 24 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2004:799601 HCAPLUS Full-text

DOCUMENT NUMBER: 141:313288

TITLE: Polymer composition of proteins, polysaccharides  
 and/or glycerides for use in food products

INVENTOR(S): Bruggeman, Yvonne Evelien; Van Der Hijden,  
 Hendrikus Theodorus W. M.; Ravestein, Peter

PATENT ASSIGNEE(S): Unilever N.V., Neth.; Unilever Plc; Hindustan  
 Lever Limited

SOURCE: PCT Int. Appl., 32 pp.  
 CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004083256	A1	20040930	WO 2004-EP2148	20040304

<--

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA,  
 CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
 GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP,

KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,  
 MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD,  
 SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,  
 VC, VN, YU, ZA, ZM, ZW  
 RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM,  
 AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE,  
 DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT,  
 RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,  
 ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.:

EP 2003-75817

A 20030321

&lt;--

ED Entered STN: 30 Sep 2004

AB Polymer compns. comprises at least 2 building blocks covalently linked via phenolic residues containing a methoxy group positioned ortho with respect to the hydroxyl group, wherein the building blocks are selected from protein (P), glycerides (G) and polysaccharides (S) and wherein the covalent linkage via phenolic residues is between P-P, S-S, P-S, P-G, G-G, G-S or combinations thereof, characterized in that at least one of the phenolic residues is covalently bonded to a building block via a Schiff's base, show good emulsifying, thickening, encapsulation and stabilizing properties. Hence they are suitable for use in food products, especially emulsions and foams.

IT 9000-69-5D, Pectin, derivs.

(crosslinked; production of polymer composition of proteins, polysaccharides

and/or glycerides for use in food products)

RN 9000-69-5 HCAPLUS

CN Pectin (CA INDEX NAME)

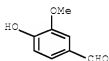
\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 121-33-5D, Vanillin, reaction products with ovalbumin 1135-24-6, Ferulic acid

(production of polymer composition of proteins, polysaccharides and/or glycerides for use in food products)

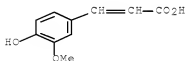
RN 121-33-5 HCAPLUS

CN Benzaldehyde, 4-hydroxy-3-methoxy- (CA INDEX NAME)



RN 1135-24-6 HCAPLUS

CN 2-Propenoic acid, 3-(4-hydroxy-3-methoxyphenyl)- (CA INDEX NAME)

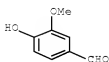


IT 121-33-5, Vanillin 9012-76-4,  
 Chitosan

(production of polymer composition of proteins, polysaccharides and/or glycerides for use in food products)

RN 121-33-5 HCAPLUS

CN Benzaldehyde, 4-hydroxy-3-methoxy- (CA INDEX NAME)



RN 9012-76-4 HCAPLUS

CN Chitosan (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IPCI C08B0037-08 [ICM,7]; C08B0037-06 [ICS,7]; C08B0037-00 [ICS,7,C\*]; C08H0001-00 [ICS,7]

IPCR C08B0037-00 [I,C\*]; C08B0037-00 [I,A]; C08B0037-08 [I,A]; C08H0001-00 [I,C\*]; C08H0001-00 [I,A]

CC 17-9 (Food and Feed Chemistry)  
Section cross-reference(s): 44

IT Ovalbumin

(reaction products with vanillin; production of polymer composition of proteins, polysaccharides and/or glycerides for use in food products)

IT Caseins, biological studies

(sodium complexes, reaction products with vanillin; production of polymer composition of proteins, polysaccharides and/or glycerides for use in food products)

IT 9000-69-5D, Pectin, derivs.

(crosslinked; production of polymer composition of proteins, polysaccharides

and/or glycerides for use in food products)

IT 121-33-5D, Vanillin, reaction products with

ovalbumin 121-34-6, Vanillic acid 458-35-5, Coniferol

1135-24-6, Ferulic acid 80498-15-3,

Laccase

(production of polymer composition of proteins, polysaccharides and/or glycerides for use in food products)

IT 121-33-5, Vanillin 9012-76-4,

Chitosan

(production of polymer composition of proteins, polysaccharides and/or glycerides for use in food products)

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L97 ANSWER 5 OF 24 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2004:672742 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 142:294616

TITLE: Ferulic acid: an antioxidant found naturally in plant cell walls and feruloyl esterases involved in its release and their applications

AUTHOR(S): Mathew, Sindhu; Abraham, T.

CORPORATE SOURCE: Biochemical Processing Section, Regional Research Laboratory (CSIR), Kerala, 695019, India

SOURCE: Critical Reviews in Biotechnology (2004  
, 24(2-3), 59-83  
CODEN: CRBTE5; ISSN: 0738-8551  
PUBLISHER: Taylor & Francis, Inc.  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: English

ED Entered STN: 18 Aug 2004

AB A review. Ferulic acid is the most abundant hydroxycinnamic acid in the plant world and maize bran with 3.1% (weight/weight) ferulic acid is one of the most promising sources of this antioxidant. The dehydromers of ferulic acid are important structural components in the plant cell wall and serve to enhance its rigidity and strength. Feruloyl esterases are a subclass of the carboxylic acid esterases that hydrolyze the ester bond between hydroxycinnamic acids and sugars present in plant cell walls and they have been isolated from a wide range of microorganisms, when grown on complex substrates such as cereal brans, sugar beet pulp, pectin and xylan. These enzymes perform a function similar to alkali in the deesterification of plant cell wall and differ in their specificities towards the Me esters of cinnamic acids and feruloylated oligosaccharides. They act synergistically with xylanases and pectinases and facilitate the access of hydrolases to the backbone of cell wall polymers. The applications of ferulic acid and feruloyl esterase enzymes are many and varied. Ferulic acid obtained from agricultural byproducts is a potential precursor for the production of natural vanillin, due to the lower production cost.

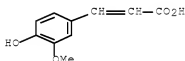
IT 1135-24-6, Ferulic acid

134712-49-5, Feruloyl esterase

(ferulic acid is an antioxidant found naturally  
in plant cell walls and feruloyl esterases involved in  
its release and their applications)

RN 1135-24-6 HCAPLUS

CN 2-Propenoic acid, 3-(4-hydroxy-3-methoxyphenyl)- (CA INDEX NAME)



RN 134712-49-5 HCAPLUS

CN Esterase, feruloyl (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CC 11-0 (Plant Biochemistry)

Section cross-reference(s): 17

ST review ferulic acid cell wall antioxidant

feruloyl esterase

IT Antioxidants

Aspergillus niger

Cell wall

(ferulic acid is an antioxidant found naturally  
in plant cell walls and feruloyl esterases involved in  
its release and their applications)

IT 1135-24-6, Ferulic acid

134712-49-5, Feruloyl esterase

(ferulic acid is an antioxidant found naturally  
in plant cell walls and feruloyl esterases involved in  
its release and their applications)

OS.CITING REF COUNT: 50 THERE ARE 50 CAPLUS RECORDS THAT CITE THIS RECORD (50 CITINGS)

REFERENCE COUNT: 191 THERE ARE 191 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L97 ANSWER 6 OF 24 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2002:968085 HCAPLUS Full-text

DOCUMENT NUMBER: 138:220646

TITLE: Glycosidically bound flavour compounds in hop (*Humulus lupulus* L.): 1. Enzymatical liberation of aglycones

AUTHOR(S): Kollmannsberger, H.; Nitz, S.

CORPORATE SOURCE: Department Lebensmittel und Ernaehrung, Lehrstuhl fuer Chem-Techn. Analyse u. Chem. Lebensmitteltechnologie, Freising-Weihestephan, D-85350, Germany

SOURCE: AFS, Advances in Food Sciences (2002), 24(3), 106-115  
CODEN: AAFSBE

PUBLISHER: PSP - Parlar Scientific Publications

DOCUMENT TYPE: Journal

LANGUAGE: German

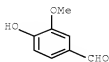
ED Entered STN: 23 Dec 2002

AB The efficiency of different enzyme preps. (almond  $\beta$ -glucosidase, glucosidase from *Aspergillus niger*, pectinase, hesperidinase,  $\alpha$ -amylase, a amylase-mixture, a hemicellulase preparation) for the cleavage of glycosidically bound flavor compds. of hops (*Humulus lupulus* L.) was investigated. Enzymes were added to either synthetic B-D-glucosides (phenyl- and octyl-) or hop exts. The hop exts. were made by extraction with a water-methanol mixture, or by hot-water extraction and subsequent adsorption on an Amberlite XAD-2 resin. The isolated aglycons were investigated by gas chromatog. - mass spectrometry. Main compds. among the aglycons were 3-methylbutan-2-ol, 3- and 2-methylbutane-1-ol, 3-methyl-2-butene-1-ol, 3-methylpentane-2-ol, 3(Z)-hexenol, hexanol, 1-octen-3-ol, benzylalc., 2-phenylethanol, linalool,  $\alpha$ -terpineol, methylsalicylate, 2,6-dimethylocta-2,7-diene-1,6-diol, 3-hydroxy-7,8-dihydro- $\beta$ -ionol, 3-hydroxy-5,6-epoxy- $\beta$ -ionol, vomifoliol and 7,8-dihydro-vomifoliol. Addnl. small amts. of 3-hydroxy- $\beta$ -damascone, a precursor of the sensorial important  $\beta$ -damascenone could be found among the aglycons. Best yields of aglycons could be achieved with glucosidase from *Aspergillus niger* and with rapidase (a hemicellulase preparation with glycosidic activities). Com. available  $\alpha$ -amylase was found to be not suitable for hydrolysis of hop glycosides.

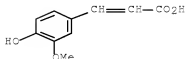
IT 121-33-5, Vanillin 1135-24-6,  
Ferulic acid  
(enzymic liberation of aglycons from glycosidically bound flavor compds. in hop)

RN 121-33-5 HCAPLUS

CN Benzaldehyde, 4-hydroxy-3-methoxy- (CA INDEX NAME)



RN 1135-24-6 HCAPLUS  
 CN 2-Propenoic acid, 3-(4-hydroxy-3-methoxyphenyl)- (CA INDEX NAME)



IT 9032-75-1, Pectinase  
 (enzymic liberation of aglycons from glycosidically bound flavor  
 compds. in hop)  
 RN 9032-75-1 HCAPLUS  
 CN Polygalacturonase (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CC 17-13 (Food and Feed Chemistry)  
 IT 71-36-3, Butan-1-ol, processes 71-41-0, Pentan-1-ol, processes  
 75-65-0, 2-Methyl-propan-2-ol, processes 78-70-6, Linalool  
 78-92-2, Butan-2-ol 98-55-5,  $\alpha$ -Terpineol 100-51-6,  
 Benzylalcohol, processes 106-24-1, Geraniol 108-11-2,  
 4-Methyl-pentan-2-ol 108-93-0, Cyclohexanol, processes 115-18-4  
 119-36-8, Methylsalicylate 121-33-5, Vanillin  
 121-34-6, Vanillic acid 123-08-0, 4-Hydroxy-benzaldehyde 123-51-3,  
 3-Methyl-butan-1-ol 137-32-6, 2-Methyl-butan-1-ol 501-94-0,  
 Tyrosol 556-82-1, 3-Methyl-2-buten-1-ol 565-60-6,  
 3-Methyl-pentan-2-ol 584-02-1, Pentan-3-ol 598-75-4,  
 3-Methyl-butan-2-ol 928-96-1, cis-3-Hexenol 1135-24-6,  
 Ferulic acid 1321-27-3, Phenylethanol 1464-44-4,  
 Phenyl  $\beta$ -D-glucoside 2628-17-3, 4-Vinylphenol 3391-86-4,  
 1-Octen-3-ol 5502-74-9, p-Menth-1-ene-7,8-diol 6032-29-7,  
 Pentan-2-ol 7400-08-0, p-Hydroxy-cinnamic acid 7786-61-0,  
 4-Vinylguaiacol 10473-14-0, 3-Methyl-3-buten-2-ol 14398-34-6,  
 3-Hydroxy- $\beta$ -ionone 23526-45-6, Vomifolol 25917-35-5, Hexanol  
 29656-58-4, Hydroxy benzoic acid 29836-26-8, Octyl  
 $\beta$ -D-glucoside 35734-61-3, 3-Hydroxy- $\beta$ -damascone  
 38274-01-0, 3-Hydroxy-5,6-epoxy- $\beta$ -ionone 51079-52-8,  
 4,6-Dimethyl-heptan-2-ol 131544-22-4 398453-07-1  
 (enzymic liberation of aglycons from glycosidically bound flavor  
 compds. in hop)  
 IT 9000-90-2,  $\alpha$ -Amylase 9000-92-4, Amylase 9025-56-3,  
 Hemicellulase 9032-75-1, Pectinase 9033-06-1,  
 Glucosidase 37213-47-1, Hesperidinase  
 (enzymic liberation of aglycons from glycosidically bound flavor  
 compds. in hop)

OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS  
 RECORD (5 CITINGS)  
 REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
 RE FORMAT

L97 ANSWER 7 OF 24 HCAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 2001:31308 HCAPLUS Full-text  
 DOCUMENT NUMBER: 134:91147  
 TITLE: A method for the improvement of transport across  
 adaptable semi-permeable barriers

INVENTOR(S): Cevc, Gregor  
 PATENT ASSIGNEE(S): Idea Innovative Dermale Applikationen G.m.b.H.,  
 Germany  
 SOURCE: PCT Int. Appl., 94 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001001962	A1	20010111	WO 1999-EP4659	19990705
<--				
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9954096	A	20010122	AU 1999-54096	19990705
<--				
CA 2375157	A1	20010111	CA 2000-2375157	20000705
<--				
WO 2001001963	A1	20010111	WO 2000-EP6367	20000705
<--				
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1189598	A1	20020327	EP 2000-947939	20000705
<--				
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
HU 2002001454	A2	20021228	HU 2002-1454	20000705
<--				
HU 2002001454	A3	20040528		
JP 2003503442	T	20030128	JP 2001-507458	20000705
<--				
EE 2002000008	A	20030415	EE 2002-8	20000705
<--				
AU 779765	B2	20050210	AU 2000-61557	20000705
<--				
RU 2260445	C2	20050920	RU 2002-101651	20000705
<--				
HR 2001000881	A2	20030831	HR 2001-881	20011127
<--				
IN 2001DN01133	A	20050311	IN 2001-DN1133	20011206
<--				
IN 213819	A1	20080125		
KR 852901	B1	20080819	KR 2001-716947	20011231
<--				
NO 2002000032	A	20020305	NO 2002-32	20020104



US 20030099694	A1	20030529	US 2002-37480	20020104
			<--	
US 7459171	B2	20081202	<--	
MX 2002000053	A	20030721	MX 2002-53	20020107
			<--	
US 20050123897	A1	20050609	US 2004-984450	20041108
			<--	
US 7591949	B2	20090922		
IN 2005DN03651	A	20070824	IN 2005-DN3651	20050818
			<--	
PRIORITY APPLN. INFO.:			WO 1999-EP4659	A 19990705
			<--	
			WO 2000-EP6367	W 20000705
			<--	
			IN 2001-DN1133	A3 20011206
			<--	
			US 2002-37480	A1 20020104
			<--	

## ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

ED Entered STN: 12 Jan 2001

AB The invention relates to a method, a kit and a device for controlling the flux of penetrants across an adaptable semi-permeable porous barrier, the method comprising the steps of: preparing a formulation by suspending or dispersing said penetrants in a polar liquid in the form of fluid droplets surrounded by a membrane-like coating of one or several layers, said coating comprising at least two kinds of forms of amphiphilic substances with a tendency to aggregate; said penetrants being able to transport agents through the pores of said barrier or to enable agent permeation through the pores of said barrier after penetrants have entered the pores, selecting a dose amount of said penetrants to be applied on a predetd. area of said barrier to control the flux of said penetrants across said barrier, and applying the selected dose amount of said formulation containing said penetrants onto said area of said porous barrier. Highly adaptable complex droplets (ultradeformable vesicles or Transfersomes) were prepared containing soybean phosphatidylcholine, Na cholate, 3H-labeled DPPC and phosphate buffer. IPCI A61K0009-127 [ICM, 7]; A61K0009-70 [ICS, 7]

IPCR A61F0002-28 [I,C\*]; A61F0002-28 [I,A]; A61F0002-02 [I,C\*]; A61F0002-02 [I,A]; A61K0009-127 [I,C\*]; A61K0009-127 [I,A]; A61K0009-70 [I,C\*]; A61K0009-70 [I,A]; A61K0031-045 [I,C\*]; A61K0031-045 [I,A]; A61K0031-05 [I,A]; A61K0031-055 [I,A]; A61K0031-14 [I,C\*]; A61K0031-14 [I,A]; A61K0031-185 [I,C\*]; A61K0031-19 [I,A]; A61K0031-192 [I,A]; A61K0031-28 [I,C\*]; A61K0031-305 [I,A]; A61K0031-452 [I,C\*]; A61K0031-452 [I,A]; A61K0045-00 [I,C\*]; A61K0045-00 [I,A]; A61K0047-02 [I,C\*]; A61K0047-02 [I,A]; A61K0047-08 [I,C\*]; A61K0047-08 [I,A]; A61K0047-10 [I,C\*]; A61K0047-10 [I,A]; A61K0047-12 [I,C\*]; A61K0047-12 [I,A]; A61K0047-14 [I,C\*]; A61K0047-14 [I,A]; A61K0047-16 [I,C\*]; A61K0047-18 [I,A]; A61K0047-22 [I,C\*]; A61K0047-22 [I,A]; A61K0047-26 [I,C\*]; A61K0047-26 [I,A]; A61K0047-28 [I,C\*]; A61K0047-28 [I,A]; A61K0047-32 [I,C\*]; A61K0047-32 [I,A]; A61K0047-34 [I,C\*]; A61K0047-34 [I,A]; A61K0047-36 [I,C\*]; A61K0047-36 [I,A]; A61K0047-38 [I,C\*]; A61K0047-38 [I,A]; A61K0047-42 [I,C\*]; A61K0047-42 [I,A]; A61K0047-46 [I,C\*]; A61K0047-46 [I,A]; A61L0027-00 [I,C\*]; A61L0027-22 [I,A]; A61L0027-26 [I,A]; A61L0027-34 [I,A]; A61L0027-48 [I,A]; A61P0001-00 [I,C\*]; A61P0001-00 [I,A]; A61P0001-16 [I,A]; A61P0001-18 [I,A]; A61P0003-00 [I,C\*]; A61P0003-14 [I,A]; A61P0007-00 [I,C\*]; A61P0007-00 [I,A]; A61P0011-00 [I,C\*]; A61P0011-00 [I,A]; A61P0013-00 [I,C\*]; A61P0013-00 [I,A]; A61P0017-00 [I,C\*]; A61P0017-00 [I,A]; A61P0017-02 [I,A]; A61P0019-00 [I,C\*]; A61P0019-00 [I,A]; A61P0021-00 [I,C\*]; A61P0021-04 [I,A]; A61P0025-00 [I,C\*]; A61P0025-02 [I,A]; A61P0025-08 [I,A]; A61P0027-00 [I,C\*]; A61P0027-02 [I,A]; A61P0027-16 [I,A];

A61P0029-00 [I,C\*]; A61P0029-00 [I,A]; A61P0031-00 [I,C\*]; A61P0031-00 [I,A]; A61P0031-04 [I,A]; C12Q0001-00 [I,C\*]; C12Q0001-00 [I,A]; C12Q0001-18 [I,C\*]; C12Q0001-18 [I,A]

CC 63-6 (Pharmaceuticals)

IT 50-81-7, Ascorbic acid, biological studies 57-09-0, Cetrimeronium bromide 57-15-8, Chlorbutanol 59-02-9,  $\alpha$ -Tocopherol 59-02-9D,  $\alpha$ -Tocopherol, acyl derivs. 64-17-5, Ethanol, biological studies 67-63-0, Isopropanol, biological studies 69-72-7, Salicylic acid, biological studies 77-95-2, Quinic acid 79-10-7D, Acrylic acid, polymers 79-41-4D, Methacrylic acid, polymers 86-74-8, Carbazole 90-05-1, Guaiacol 97-53-0, Eugenol 99-50-3, Protocatechuic acid 100-51-6, Benzyl alcohol, biological studies 107-15-3D, Ethylenediamine, derivs. 108-95-2D, Phenol, derivs., biological studies 119-13-1,  $\delta$ -Tocopherol 119-13-1D,  $\delta$ -Tocopherol, acyl derivs. 121-33-5, Vanillin 121-79-9, Propyl gallate 122-39-4, Diphenylamine, biological studies 123-31-9, Hydroquinone, biological studies 128-37-0, Bht, biological studies 137-66-6, L-Ascorbic acid, 6-palmitate 148-03-8,  $\beta$ -Tocopherol 148-03-8D,  $\beta$ -Tocopherol, acyl derivs. 149-91-7, Gallic acid, biological studies 476-66-4, Ellagic acid 500-38-9, Nordihydroguaiaretic acid 530-57-4, Syringic acid 1338-39-2, Sorbitan monolaurate 2495-84-3, L-Ascorbic acid, 6-oleate 3934-16-5D, Methallylsulfonic acid, derivs. 4197-69-7, 2-Butylhydroquinone 5725-96-2, Dimethylamine oxide 7616-22-0,  $\gamma$ -Tocopherol 7616-22-0D,  $\gamma$ -Tocopherol, acyl derivs. 9000-07-1, Carrageenan 9000-30-0, Guar gum 9000-65-1, Gum tragacanth 9000-69-5, Pectin 9002-88-4, Polyethylene 9002-89-5 9003-39-8, Pvp 9004-32-4 9004-34-6D, Cellulose, derivs., biological studies 9004-61-9, Hyaluronic acid 9004-62-0, Hydroxyethyl cellulose 9004-64-2, Hydroxypropyl cellulose 9004-65-3, Hydroxypropyl methyl cellulose 9004-67-5, Methyl cellulose 9004-81-3, Polyethylene glycol laurate 9004-96-0, Polyethylene glycol oleate 9004-99-3, Myrj 45 9005-32-7, Alginate 9005-64-5, Tween 20 9005-65-6, Tween 80 9012-36-6, Agarose 9012-76-4, Chitosan 9016-45-9, Polyethylene glycol nonylphenyl ether 9063-89-2 9086-85-5, Poly(hydroxypropyl methacrylate) 11138-66-2, Xanthan gum 12041-76-8, Dichlorobenzyl alcohol 16690-40-7, L-Ascorbyl 6-laurate 25013-16-5, Bha 25014-41-9, Polyacrylonitrile 25249-16-5 25322-68-3, Peg 26746-38-3, Di-tert-butylphenol 29349-22-2, Chlorobenzyl alcohol 33425-76-2, L-Ascorbic acid, 6-myristate 50546-45-7, Octaethylene glycol monoisotridecyl ether 53188-07-1, Trolox 85261-20-7, Decanoyl-N-methylglucamide 87246-72-8, D-Glucitol, 1-deoxy-1-[methyl(1-oxododecyl)amino]- 88306-53-0, 1,4-Dioxane-2,5-dione, 3,6-dimethyl-, polymer with  $\alpha$ -hydro- $\omega$ -hydroxy-Poly(oxy-1,2-ethanediy) 90522-12-6, Poly(N-propylmethacrylamide) 106392-12-5, Poloxamer 121869-32-7 148081-72-5, 1-O-Hexyl-2,3,5-trimethylhydroquinone 158606-68-9, Polyspartamide 191997-39-4

(improvement of transport across adaptable semi-permeable barriers)

IT 50-06-6, Phenobarbital, biological studies 50-33-9, Phenylbutazone, biological studies 50-78-2, Acetylsalicylic acid 50-99-7, D-Glucose, biological studies 52-67-5, Penicillamine 53-86-1, Iodomethacin 54-05-7, Chloroquine 54-64-8, Thiomersal 55-56-1, Chlorhexidine 55-68-5, Phenylmercuric nitrate 59-05-2, Methotrexate 59-50-7, 4-Chloro-3-methylphenol 60-00-4, Edta, biological studies 61-68-7, Mefenamic acid 62-38-4, Phenylmercuric acetate 62-56-6, Thiourea, biological studies 65-85-0, Benzoic acid, biological studies 69-93-2, Uric acid, biological studies

70-18-8, Glutathione, biological studies 70-30-4, Hexachlorophene  
 71-00-1D, L-Histidine, thio derivs., biological studies 73-22-3D,  
 Tryptophan, metabolites 81-24-3D, Taurocholic acid, salts  
 81-25-4D, Cholic acid, salts 83-44-3D, Deoxycholic acid, salts  
 83-89-6, Quinacrine 88-04-0, p-Chloro-m-xylene 90-34-6,  
 Primaquine 94-13-3, Propylparaben 94-18-8, Benzylparaben  
 94-26-8, Butylparaben 94-41-7D, Chalcone, derivs. 97-23-4,  
 Dichlorophene 99-76-3, Methylparaben 102-98-7, Phenylmercuric  
 borate 103-90-2, Acetaminophen 110-44-1, Sorbic acid 120-47-8,  
 Ethylparaben 123-03-5, Cetylpyridinium chloride 129-20-4,  
 Oxypentazone 138-14-7, Desferal 143-19-1, Sodium oleate  
 151-41-7, Lauryl sulfate 302-95-4, Sodium deoxycholate 327-97-9,  
 Chlorogenic acid 331-39-5, Caffeic acid 360-65-6D,  
 Glycodeoxycholic acid, salts 446-86-6, Azathioprine 475-31-0D,  
 Glycocholic acid, salts 484-78-6, 3-Hydroxykynurenine 490-79-9,  
 Gentisic acid 516-50-7D, Taurodeoxycholic acid, salts 525-66-6,  
 Propranolol 530-59-6, Sinapic acid 530-78-9, Flufenamic acid  
 538-71-6, Phenododecinium bromide 548-93-6, 3-Hydroxyanthranilic  
 acid 616-91-1, N-Acetylcysteine 621-82-9, Cinnamic acid,  
 biological studies 629-25-4, Sodium laurate 635-65-4, Bilirubin,  
 biological studies 822-17-3, Sodium linoleate 1135-24-6,  
 Ferulic acid 1319-77-3, Cresol 1951-25-3, Amiodarone  
 3650-09-7, Carnosic acid 5677-55-4, Ubiquinol-10 5957-80-2,  
 Carnosol 7235-40-7,  $\beta$ -Carotene 7347-25-3, Sodium taurate  
 7631-90-5, Sodium bisulfite 7681-57-4, Sodium metabisulfite  
 7747-53-7 9001-05-2, Catalase 9002-92-0, Poly(oxy-1,2-ethanediyl),  
 $\alpha$ -dodecyl- $\omega$ -hydroxy- 9013-66-5, Glutathione peroxidase  
 9031-37-2, Ceruloplasmin 9054-89-1, Superoxide dismutase  
 10540-29-1, Tamoxifen 15307-86-5, Diclofenac 15687-27-1, Ibuprofen  
 16409-34-0, Sodium glycodeoxycholate 18175-45-6, Sodium elaidate  
 18472-51-0, Chlorhexidine gluconate 18683-91-5, Ambroxol  
 19767-45-4, Mesna 20283-92-5, Rosmarinic acid 20902-45-8,  
 Penicillamine disulfide 21829-25-4, Nifedipine 22071-15-4,  
 Ketoprofen 22204-53-1, Naproxen 22494-42-4, Diflunisal  
 23288-49-5, Probuco 25429-38-3, Hydroxycinnamic acid 25655-41-8,  
 Povidone-iodine 28088-64-4, Aminosalicilic acid 29122-68-7,  
 Atenolol 36322-90-4, Piroxicam 37640-71-4, Aprindine 55101-76-3,  
 Chloro-8-hydroxyquinoline 55985-32-5, Nicardipine 63675-72-9,  
 Nisoldipine 66085-59-4, Nimodipine 73584-61-9, Carnosolic acid  
 75530-68-6, Nilvadipine 77207-49-9 77400-65-8, Asocinol  
 108605-69-2, Avenanthramide 1 110101-67-2, U74006F 118457-14-0,  
 Nebivolol 154992-25-3, Avenanthramide 2  
 (improvement of transport across adaptable semi-permeable barriers)

OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS  
 RECORD (7 CITINGS)  
 REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
 RE FORMAT

L97 ANSWER 8 OF 24 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2000:456858 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 133:94512

TITLE: Improved formulation for topical non-invasive  
 application in vivo

INVENTOR(S): Cevc, Gregor

PATENT ASSIGNEE(S): Idea Innovative Dermale Applikationen G.m.b.H.,  
 Germany

SOURCE: PCT Int. Appl., 73 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000038653	A1	20000706	WO 1998-EP8421	19981223
<--				
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2356080	A1	20000706	CA 1998-2356080	19981223
<--				
CA 2356080	C	20090512		
AU 9925137	A	20000731	AU 1999-25137	19981223
<--				
AU 770803	B2	20040304		
EP 1140021	A1	20011010	EP 1998-966846	19981223
<--				
EP 1140021	B1	20040804		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
BR 9816113	A	20011023	BR 1998-16113	19981223
<--				
HU 2001004424	A2	20020328	HU 2001-4424	19981223
<--				
HU 2001004424	A3	20021228		
JP 2002533379	T	20021008	JP 2000-590607	19981223
<--				
EE 2001000342	A	20021015	EE 2001-342	19981223
<--				
RU 2207844	C2	20030710	RU 2001-120008	19981223
<--				
AT 272391	T	20040815	AT 1998-966846	19981223
<--				
ES 2226203	T3	20050316	ES 1998-966846	19981223
<--				
PL 193824	B1	20070330	PL 1967-3494	19981223
<--				
CN 1320880	C	20070613	CN 1998-814369	19981223
<--				
HR 2001000309	A2	20020630	HR 2001-309	20010502
<--				
HR 2001000309	B1	20050630		
NO 2001003164	A	20010822	NO 2001-3164	20010622
<--				
US 20020064524	A1	20020530	US 2001-887493	20010622
<--				
US 7175850	B2	20070213		
MX 2001006424	A	20020604	MX 2001-6424	20010622
<--				
HK 1040629	A1	20050128	HK 2002-102230	20020323
<--				
KR 2006088906	A	20060807	KR 2006-712557	20060622
<--				

US 20070184114	A1	20070809	US 2006-638091	20061212
			<--	
PRIORITY APPLN. INFO.:			WO 1998-EP8421	A 19981223
			<--	
			KR 2001-706708	A3 20010529
			<--	
			US 2001-887493	A1 20010622
			<--	

## ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 133:94512

ED Entered STN: 07 Jul 2000

AB A formulation comprises mol. arrangements capable of penetrating pores in a barrier, owing to penetrant adaptability, despite the fact that the average diameter of the pores is smaller than the average penetrant diameter, provided that the penetrants can transport agents or cause permeation through the pores after penetrants have entered pores. The formulation comprises at least 1 consistency builder in an amount that increases the formulation to maximally 5 Nm/s so that spreading over is enabled. The formulation also contains 1 antioxidant in an amount that reduces the increase of oxidation index to <100% per 6 mo and/or at least 1 microbicide in an amount that reduces the bacterial count of 1 million germs added/g of total mass of the formulation to <100 in the case of aerobic bacteria, to <10 in the case of entero-bacteria, and to <1 in the case of *Pseudomonas aeruginosa* or *Staphylococcus aureus*, after a period of 4 days. Thus, a composition contained soybean phosphatidylcholine 347, Tween-80 623, sodium dodecyl sulfate 30, benzyl alc. 50, clobetasol 17-propionate 25 and pH 6.5 50 mM phosphate buffer 9000 mg.

IPCI A61K0009-127 [ICM,6]

IPCR A61K0009-10 [I,C\*]; A61K0009-10 [I,A]; A61K0009-127 [I,C\*];  
 A61K0009-127 [I,A]; A61K0031-16 [I,C\*]; A61K0031-16 [I,A]; A61K0031-56 [I,C\*]; A61K0031-56 [I,A]; A61K0031-57 [I,C\*]; A61K0031-57 [I,A];  
 A61K0031-58 [I,C\*]; A61K0031-58 [I,A]; A61K0047-02 [I,C\*]; A61K0047-02 [I,A]; A61K0047-10 [I,C\*]; A61K0047-10 [I,A]; A61K0047-12 [I,C\*];  
 A61K0047-12 [I,A]; A61K0047-14 [I,C\*]; A61K0047-14 [I,A]; A61K0047-16 [I,C\*]; A61K0047-16 [I,A]; A61K0047-18 [I,A]; A61K0047-20 [I,C\*]; A61K0047-20 [I,A];  
 A61K0047-22 [I,C\*]; A61K0047-22 [I,A]; A61K0047-24 [I,C\*]; A61K0047-24 [I,A]; A61K0047-26 [I,C\*]; A61K0047-26 [I,A]; A61K0047-28 [I,C\*];  
 A61K0047-28 [I,A]; A61K0047-32 [I,C\*]; A61K0047-32 [I,A]; A61K0047-34 [I,C\*]; A61K0047-34 [I,A]; A61K0047-36 [I,C\*]; A61K0047-36 [I,A];  
 A61K0047-38 [I,C\*]; A61K0047-38 [I,A]; A61K0047-42 [I,C\*]; A61K0047-42 [I,A]; A61K0047-46 [I,C\*]; A61K0047-46 [I,A]; A61P0001-00 [I,C\*];  
 A61P0001-16 [I,A]; A61P0001-18 [I,A]; A61P0007-00 [I,C\*]; A61P0007-06 [I,A]; A61P0011-00 [I,C\*]; A61P0011-06 [I,A]; A61P0013-00 [I,C\*];  
 A61P0013-12 [I,A]; A61P0017-00 [I,C\*]; A61P0017-00 [I,A]; A61P0017-06 [I,A]; A61P0017-14 [I,A]; A61P0019-00 [I,C\*]; A61P0019-00 [I,A];  
 A61P0019-02 [I,A]; A61P0021-00 [I,C\*]; A61P0021-00 [I,A]; A61P0025-00 [I,C\*]; A61P0025-08 [I,A]; A61P0027-00 [I,C\*]; A61P0027-00 [I,A];  
 A61P0027-02 [I,A]; A61P0029-00 [I,C\*]; A61P0029-00 [I,A]; A61P0031-00 [I,C\*]; A61P0031-12 [I,A]; A61P0031-22 [I,A]

CC 63-6 (Pharmaceuticals)

Section cross-reference(s): 1

IT 50-06-6, Phenobarbital, biological studies 50-33-9, Phenylbutazone, biological studies 50-78-2, Acetylsalicylic acid 50-81-7, Ascorbic Acid, biological studies 50-99-7, Glucose, biological studies 52-67-5, Penicillamine 53-86-1, Indomethacin 54-05-7, Chloroquine 54-64-8, Thiomersal 55-56-1, Chlorhexidine 55-68-5, Phenylmercuric nitrate 56-81-5, Glycerol, biological studies 57-15-8, Chlorbutanol 59-02-9,  $\alpha$ -Tocopherol 59-05-2, Methotrexate 59-50-7, 4-Chloro-m-cresol 60-00-4, EDTA, biological studies 61-68-7, Mefenamic acid 62-38-4, Phenylmercuric acetate 62-56-6, Thiourea, biological studies 64-17-5, Ethyl alcohol, biological

studies 65-85-0, Benzoic acid, biological studies 67-63-0, Isopropyl alcohol, biological studies 67-68-5D, DMSO, alkyl derivs. 69-72-7, Salicylic Acid, biological studies 69-93-2, Uric acid, biological studies 70-18-8, Glutathione, biological studies 70-30-4, Hexachlorophene 81-24-3D, salts 81-25-4D, salts 83-44-3D, salts 83-89-6, Quinacrine 86-74-8, Carbazole 89-65-6 90-05-1, Guaiacol 90-34-6, Primaquine 94-13-3, Propylparaben 94-18-8, Benzylparaben 94-26-8, Butylparaben 97-23-4, Dichlorophene 99-50-3, Protocatechuic acid 99-76-3, Methylparaben 100-51-6, Benzyl alcohol, biological studies 102-98-7, Phenylmercuric borate 103-90-2, Acetaminophen 107-15-3D, Ethylenediamine, derivs. 107-21-1, Ethylene glycol, biological studies 110-27-0, Isopropyl myristate 110-44-1, Sorbic acid 112-53-8, 1-Dodecanol 112-80-1, Oleic acid, biological studies 118-42-3, Hydroxychloroquine 119-13-1,  $\delta$ -Tocopherol 120-47-8, Ethylparaben 121-33-5, Vanillin 121-79-9, Propyl Gallate 122-39-4, Diphenylamine, biological studies 123-03-5, Cetylpyridinium chloride 123-31-9, Hydroquinone, biological studies 128-37-0, BHT, biological studies 129-20-4, Oxyphenbutazone 137-66-6 138-14-7, Desferal 141-78-6, EtOAc, biological studies 143-19-1, Sodium oleate 143-28-2, Oleyl alcohol 148-03-8,  $\beta$ -Tocopherol 149-91-7, Gallic Acid, biological studies 151-41-7, Lauryl sulfate 302-95-4, Sodium deoxycholate 327-97-9, Chlorogenic acid 331-39-5, Caffeic acid 360-65-6D, salts 446-86-6, Azathioprine 475-31-0D, salts 476-66-4, Ellagic acid 484-78-6, 3-Hydroxykynurenine 490-79-9, Gentisic acid 500-38-9, Nordihydroguaiaretic Acid 516-50-7D, salts 525-66-6, Propranolol 530-57-4, Syringic acid 530-59-6, Sinapic acid 530-78-9, Flufenamic acid 534-61-2, IsoChlorogenic acid 538-71-6, Phenododecimum bromide 548-93-6, 3-Hydroxyanthranilic acid 616-91-1, N-Acetylcysteine 621-82-9, Cinnamic acid, biological studies 629-25-4, Sodium laurate 635-65-4, Bilirubin, biological studies 822-17-3, Sodium linoleate 1118-68-9D, Dimethylglycine, alkyl derivs. 1135-24-6, Ferulic acid 1319-77-3, Cresol 1643-20-5, Dodecyltrimethylamine oxide 1948-33-0, tert-Butylhydroquinone 1951-25-3, Amiodarone 2002-22-4D, derivs. 2495-84-3 3650-09-7, Carnosic acid 4353-06-4 5432-30-4 5677-55-4, Ubiquinol-10 5957-80-2, Carnosol 7235-40-7,  $\beta$ -Carotene 7347-25-3, Sodium taurate 7616-22-0,  $\gamma$ -Tocopherol 7631-90-5, Sodium bisulphite 7681-57-4, Sodium metabisulfite 7747-53-7 9000-07-1, Carrageenan 9000-30-0, Guar-gum 9000-65-1, Tragacanth 9000-69-5, Pectin 9001-05-2, Catalase 9002-88-4, Polyethylene 9002-89-5, Polyvinyl alcohol 9002-92-0, Polyethylene glycol dodecyl ether 9002-96-4 9003-39-8, Polyvinylpyrrolidone 9004-32-4, Carboxymethyl cellulose sodium salt 9004-34-6D, Cellulose, derivs., biological studies 9004-61-9, Hyaluronic Acid 9004-62-0, Hydroxyethyl cellulose 9004-64-2, Hydroxypropyl cellulose 9004-65-3, Hydroxypropylmethyl cellulose 9004-67-5, Methyl cellulose 9004-98-2, Polyethylene glycol oleyl ether 9004-99-3, Myrj 45 9005-32-7, Alginate acid 9005-64-5, Tween 20 9005-65-6, Tween 80 9012-36-6, Agarose 9012-76-4, Chitosan 9013-66-5, Glutathione peroxidase 9036-19-5, Polyethylene glycol octylphenyl ether 9043-30-5, Polyethylene glycol isotridecyl ether 9054-89-1, Superoxide dismutase 9086-85-5, Poly(hydroxypropyl) methacrylate 10540-29-1, Tamoxifen 11138-66-2, Xanthan 12041-76-8, Dichlorobenzylalcohol 15307-86-5, Diclofenac 15687-27-1, Ibuprofen 16409-34-0, Sodium glycodeoxycholate 16690-40-7 18175-45-6, Sodium elaidate 18472-51-0, Chlorhexidine gluconate 18683-91-5, Ambroxol

19767-45-4, Mesna 20283-92-5, Rosmarinic acid 20902-45-8,  
 Penicillamine disulfide 21829-25-4, Nifedipine 22071-15-4,  
 Ketoprofen 22204-53-1, Naproxen 22494-42-4, Diflunisal  
 23288-49-5, Probuco 25013-16-5, BHA 25014-41-9, Polyacrylonitrile  
 25249-16-5 25322-68-3, PEG 25429-38-3, Coumaric acid 25655-41-8,  
 Povidone-iodine 26570-48-9, Polyethylene glycol-diacylate  
 26746-38-3, Di-tert-butylphenol 27306-76-9, Polyethylene glycol  
 cetyl stearyl ether 27306-79-2, Polyethylene glycol myristyl ether  
 29122-68-7, Atenolol 29349-22-2, Chlorobenzyl alcohol 33425-76-2  
 36322-90-4, Piroxicam 36413-60-2, Quinic Acid 37640-71-4,  
 Aprindine 53188-07-1, Trolox 53584-19-3 55985-32-5, Nicardipine  
 59227-89-3, Azone 63675-72-9, Nisoldipine 66085-59-4, Nimodipine  
 68047-06-3, Hydroxytamoxifen 68555-46-4 75530-68-6, Nilvadipine  
 77400-65-8, Asocinol 85261-20-7, Decanoyl N-methylglucamide  
 87246-72-8 88306-53-0 90522-12-6 91729-95-2, Rosmaridiphenol  
 99716-88-8, Methallylsulfonic acid homopolymer 106392-12-5,  
 Poloxamer 110101-67-2, U74006F 118457-14-0, Nebivolol  
 121869-32-7 148081-72-5, 1-O-Hexyl-2,3,5-trimethylhydroquinone  
 (penetrating formulation for topical non-invasive application in  
 vivo)

OS.CITING REF COUNT: 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS  
 RECORD (10 CITINGS)  
 REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR  
 THIS RECORD. ALL CITATIONS AVAILABLE IN THE  
 RE FORMAT

L97 ANSWER 9 OF 24 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1997:85147 HCAPLUS Full-text

DOCUMENT NUMBER: 126:86519

ORIGINAL REFERENCE NO.: 126:16637a,16640a

TITLE: Enzyme system comprising ferulic

acid esterase activity from Aspergillus

INVENTOR(S): Michelsen, Birgit; De Vries, Ronald Peter; Visser,

Jacob; Soe, Jörn Borch; Poulsen, Charlotte

Horsmans; Zargahi, Masoud R.

PATENT ASSIGNEE(S): Danisco A/S, Den.

SOURCE: Brit. UK Pat. Appl., 63 pp.

CODEN: BAXXDU

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2301103	A	19961127	GB 1995-10370	19950523
			<--	
GB 2301103	B	19991222		
US 6143543	A	20001107	US 1997-975600	19971121
			<--	
CA 2216629	A1	19990525	CA 1997-2216629	19971125
			<--	
PRIORITY APPLN. INFO.:			GB 1995-10370	A 19950523
			<--	

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

ED Entered STN: 06 Feb 1997

AB An ferulic acid esterase (FAE) enzyme system is described that is useful for  
 preparing food and feed. One enzyme of that system is obtainable from the  
 com. preparation Pektolase CA from Aspergillus niger by chromatog. on anion-  
 exchange DEAE-Sepharose FF and Phenyl-Sepharose HiLoad, gel filtration on

Sephacryl HiLoad, and chromatog. on MonoQ HR 5/5 anion-exchange column. That enzyme has the following characteristics: a mol. weight of 29-36 kDa as measured on a SDS-Phastgel (RTM) (10-15%) or about 30 kDa as measured by MALDI; a pI value of 3-4; ferulic acid esterase activity; a pH optimum of about 5 when Me ferulate is used as a substrate; and a temperature optimum of 50-60° when MeFA is used as a substrate. The enzyme may be obtained by recombinant techniques. PCR screening of an *Aspergillus* genomic library with degenerate primers based on FAE tryptic peptide sequences yielded a PCR fragment encoding 77 amino acids of the enzyme. In the enzyme system, the esterase may be fused to a protein or enzyme, especially a polysaccharide modifying enzyme. The effect of adding glucose oxidase/peroxidase and FAE to weak wheat flour was investigated by measuring the strength and extensibility of a dough prepared from the flour. FAE can also be used to hydrolyze water-insol. wheat bran pentosans, for the partial breakdown of cell wall material in feed and food preparation, and to prepare vanillin from ferulic acid-containing material such as sugar beet and corn cob meal.

IT 185703-06-4P 185703-08-6P  
 (amino acid sequence; enzyme system comprising ferulic acid esterase activity from *Aspergillus*)  
 RN 185703-06-4 HCAPLUS  
 CN Esterase, feruloyl (*Aspergillus niger* fragment) (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 185703-08-6 HCAPLUS  
 CN Esterase, feruloyl (*Aspergillus niger* strain 3M43 fragment) (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 134712-49-5P, Ferulate esterase  
 (enzyme system comprising ferulic acid esterase activity from *Aspergillus*)  
 RN 134712-49-5 HCAPLUS  
 CN Esterase, feruloyl (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 9032-75-1, Pectinase  
 (food/feed applications of ferulic acid esterase in combination with; enzyme system comprising ferulic acid esterase activity from *Aspergillus*)  
 RN 9032-75-1 HCAPLUS  
 CN Polygalacturonase (CA INDEX NAME)

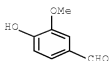
\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 185703-07-5P  
 (nucleotide sequence; enzyme system comprising ferulic acid esterase activity from *Aspergillus*)  
 RN 185703-07-5 HCAPLUS  
 CN DNA (*Aspergillus niger* strain 3M43 feruloyl esterase gene fragment) (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 121-33-5P, Vanillin  
 (preparation by enzyme system containing; enzyme system comprising ferulic acid esterase activity from *Aspergillus*)  
 RN 121-33-5 HCAPLUS  
 CN Benzaldehyde, 4-hydroxy-3-methoxy- (CA INDEX NAME)





- IPCI C12N0009-18 [ICM,6]; C12N0001-15 [ICS,6]; C12N0015-55 [ICS,6];  
C12N0015-62 [ICS,6]; C12N0015-55 [ICI,6]; C12R0001-66 [ICI,6];  
C12R0001-685 [ICI,6]; C12R0001-69 [ICI,6]
- IPCR A21D0008-02 [I,C\*]; A21D0008-04 [I,A]; A23K0001-165 [I,C\*];  
A23K0001-165 [I,A]; C07K0016-40 [I,C\*]; C07K0016-40 [I,A]; C12N0001-15  
[I,C\*]; C12N0001-15 [I,A]; C12N0009-18 [I,C\*]; C12N0009-18 [I,A];  
C12P0007-24 [I,C\*]; C12P0007-24 [I,A]
- CC 7-2 (Enzymes)  
Section cross-reference(s): 3, 17
- ST ferulic acid esterase *Aspergillus*; food prepn  
ferulic acid esterase; feed prepn ferulic  
acid esterase; sequence ferulic acid  
esterase gene *Aspergillus*
- IT Antioxidants  
*Aspergillus*  
*Aspergillus niger*  
Bakery products  
Dough  
Feed  
Food  
(enzyme system comprising ferulic acid esterase  
activity from *Aspergillus*)
- IT Antibodies  
(enzyme system comprising ferulic acid esterase  
activity from *Aspergillus*)
- IT Gene, microbial  
(enzyme system comprising ferulic acid esterase  
activity from *Aspergillus*)
- IT Corncob  
Pentosans  
Sugar beet  
Wheat bran  
(hydrolysis by enzyme preparation; enzyme system comprising  
ferulic acid esterase activity from *Aspergillus*)
- IT Protein sequences  
(of ferulic acid esterase activity from  
*Aspergillus*)
- IT DNA sequences  
(of gene for ferulic acid esterase activity  
from *Aspergillus*)
- IT Enzymes, biological studies  
(oxidizing, food/feed applications of ferulic  
acid esterase in combination with; enzyme system comprising  
ferulic acid esterase activity from *Aspergillus*)
- IT Enzymes, biological studies  
(polysaccharide-degrading, food/feed applications of  
ferulic acid esterase in combination with; enzyme  
system comprising ferulic acid esterase  
activity from *Aspergillus*)
- IT Flavoring materials  
(preparation by enzyme system containing; enzyme system comprising  
ferulic acid esterase activity from *Aspergillus*)

IT Fungi  
Plant (Embryophyta)  
Yeast  
(recombinant host for enzyme production; enzyme system comprising  
ferulic acid esterase activity from *Aspergillus*)

IT Genetic vectors  
Plasmid vectors  
(recombinant preparation of enzyme; enzyme system comprising  
ferulic acid esterase activity from *Aspergillus*)

IT Phenols, biological studies  
(release from plant substrates by enzyme preparation; enzyme system  
comprising ferulic acid esterase activity from  
*Aspergillus*)

IT 185703-92-8 185703-93-9  
(PCR primer; enzyme system comprising ferulic  
acid esterase activity from *Aspergillus*)

IT 185702-86-7P 185703-06-4P 185703-08-6P  
185765-98-4P  
(amino acid sequence; enzyme system comprising ferulic  
acid esterase activity from *Aspergillus*)

IT 134712-49-5P, Ferulate esterase  
(enzyme system comprising ferulic acid esterase  
activity from *Aspergillus*)

IT 9000-82-2, Acetyl esterase 9001-37-0, Glucose oxidase 9001-92-7,  
Proteinase 9003-99-0, Peroxidase 9015-78-5, Glucanase  
9032-75-1, Pectinase 37278-89-0, Xylanase 37325-54-5,  
Arabanase 131384-64-0, Rhamnogalacturonase  
(food/feed applications of ferulic acid  
esterase in combination with; enzyme system comprising  
ferulic acid esterase activity from *Aspergillus*)

IT 9040-27-1, Arabinoxylan  
(hydrolysis by enzyme preparation; enzyme system comprising  
ferulic acid esterase activity from *Aspergillus*)

IT 185703-07-5P  
(nucleotide sequence; enzyme system comprising ferulic  
acid esterase activity from *Aspergillus*)

IT 121-33-5P, Vanillin  
(preparation by enzyme system containing; enzyme system comprising  
ferulic acid esterase activity from *Aspergillus*)

OS.CITING REF COUNT: 18 THERE ARE 18 CAPLUS RECORDS THAT CITE THIS  
RECORD (18 CITINGS)

L97 ANSWER 10 OF 24 HCAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 1996:297270 HCAPLUS Full-text  
DOCUMENT NUMBER: 124:341158  
ORIGINAL REFERENCE NO.: 124:63369a,63372a  
TITLE: High-performance liquid  
chromatographic-electrospray mass spectrometric  
analysis of phenolic acids and aldehydes  
AUTHOR(S): Gioacchini, Anna Maria; Roda, Aldo; Galletti,  
Guido Carlo; Bocchini, Paola; Manetta, Anna  
Chiara; Baraldini, Mario  
CORPORATE SOURCE: Department of Pharmaceutical Sciences, University  
of Bologna, via Belmeloro 6, Bologna, 40126, Italy  
SOURCE: Journal of Chromatography, A (1996),  
730(1 + 2), 31-37  
CODEN: JCRAEY; ISSN: 0021-9673  
PUBLISHER: Elsevier  
DOCUMENT TYPE: Journal  
LANGUAGE: English

ED Entered STN: 18 May 1996

AB The present work describes the development of an HPLC-electrospray mass spectrometric method for the anal. of phenolic acids and aldehydes. These compds. are important for the quality of foods and feeds, such as dietary fiber supplements, wine and lignocellulose byproducts. Good separation was obtained with a Ph column (3  $\mu$ m particle size, 150 mm+3.9 mm I.D.), using MeOH-H<sub>2</sub>O (30:70, volume/volume) as the mobile phase with 0.01% CH<sub>3</sub>COOH and 0.2 mM tetra-Et ammonium iodide as the ion pairing agent, at a flow-rate of 0.3 mL/min. This system permits post column splitting of the eluate for anal. by electrospray-mass spectrometry with a flow-rate of 11  $\mu$ L/min. This new method is extremely sensitive and less than 6 pg/inj of the studied phenols can be identified and quantified. This method was applied to standard compds. as well as to components of high-fiber dietary supplements (primarily wheat bran), cornmeal, and oat bran.

IT 9000-69-5, Pectin  
(HPLC-electrospray mass spectrometric anal. of phenolic acids and aldehydes)

RN 9000-69-5 HCAPLUS

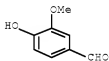
CN Pectin (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 121-33-5, Vanillin 1135-24-6,  
Ferulic acid  
(HPLC-electrospray mass spectrometric anal. of phenolic acids and aldehydes)

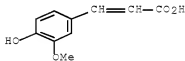
RN 121-33-5 HCAPLUS

CN Benzaldehyde, 4-hydroxy-3-methoxy- (CA INDEX NAME)



RN 1135-24-6 HCAPLUS

CN 2-Propenoic acid, 3-(4-hydroxy-3-methoxyphenyl)- (CA INDEX NAME)



CC 17-1 (Food and Feed Chemistry)

IT 9000-69-5, Pectin  
(HPLC-electrospray mass spectrometric anal. of phenolic acids and aldehydes)

IT 99-96-7, p-Hydroxybenzoic acid, analysis 121-33-5,  
Vanillin 121-34-6, Vanillic acid 123-08-0,  
p-Hydroxybenzaldehyde 134-96-3, Syringaldehyde 149-91-7, Gallic  
acid, analysis 156-38-7, p-Hydroxyphenylacetic acid 530-57-4,  
Syringic acid 1135-24-6, Ferulic acid  
7400-08-0, p-Coumaric acid

(HPLC-electrospray mass spectrometric anal. of phenolic acids and aldehydes)

OS.CITING REF COUNT: 19 THERE ARE 19 HCAPLUS RECORDS THAT CITE THIS RECORD (19 CITINGS)

L97 ANSWER 11 OF 24 HCAPLUS COPYRIGHT 2010 ACS ON STN  
 ACCESSION NUMBER: 1995:741061 HCAPLUS Full-text  
 DOCUMENT NUMBER: 123:142366  
 ORIGINAL REFERENCE NO.: 123:25353a,25356a  
 TITLE: Food preservatives containing Propionibacterium bacteriocins, sugars, alcohols, and carboxylates  
 INVENTOR(S): Yajima, Mizuo  
 PATENT ASSIGNEE(S): Asama Kasei Kk, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07115950	A	19950509	JP 1993-289749	19931027
			<--	
JP 3040295	B2	20000515	JP 1993-289749	19931027
			<--	

PRIORITY APPLN. INFO.: JP 1993-289749 19931027

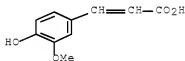
ED Entered STN: 17 Aug 1995

AB A preservative contains a bacteriocin produced by Propionibacterium and  $\geq 1$  compound selected from the group comprising carboxylates, fatty acid esters, amino acids, peptides, sugars, essential oils, and alcs. For example, a bacteriocin 0.3 and Na acetate 0.5 % by weight were added to a hamburger mixture for preservation.

IT 1135-24-6, Ferulic acid  
 (food preservatives containing bacteriocins and carboxylates)

RN 1135-24-6 HCAPLUS

CN 2-Propenoic acid, 3-(4-hydroxy-3-methoxyphenyl)- (CA INDEX NAME)



IT 9000-69-5, Pectin 9012-76-4,  
 Chitosan  
 (food preservatives containing bacteriocins and carboxylates and)  
 RN 9000-69-5 HCAPLUS  
 CN Pectin (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9012-76-4 HCAPLUS  
 CN Chitosan (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IPCI A23L0003-3526 [ICM,6]; A23L0003-3463 [ICM,6,C\*]

IPCR A23L0003-3463 [I,C\*]; A23L0003-3526 [I,A]; C12P0001-04 [I,C\*];  
C12P0001-04 [I,A]; C12R0001-01 [N,A]

CC 17-6 (Food and Feed Chemistry)

IT 50-21-5, Lactic acid, biological studies 56-40-6, Glycine, biological studies 56-41-7, Alanine, biological studies 56-87-1, L-Lysine, biological studies 56-89-3, Cystine, biological studies 64-18-6, Formic acid, biological studies 64-19-7, Acetic acid, biological studies 72-18-4, Valine, biological studies 72-19-5, Threonine, biological studies 74-79-3, Arginine, biological studies 77-92-9, biological studies 87-69-4, biological studies 109-52-4, Valeric acid, biological studies 110-15-6, Butanedioic acid, biological studies 110-17-8, 2-Butenedioic acid (E)-, biological studies 110-94-1, Pentanedioic acid 124-04-9, Hexanedioic acid, biological studies 127-17-3, Pyruvic acid, biological studies 144-62-7, Ethanedioic acid, biological studies 331-39-5, Caffeic acid 499-44-5, Hinokitiol 621-82-9, Cinnamic acid, biological studies 685-73-4D, D-Galacturonic acid, oligo- 1135-24-6, Ferulic acid 6915-15-7, Malic acid 9001-63-2, Lysozyme 25104-18-1, Polyllysine (food preservatives containing bacteriocins and carboxylates)

IT 56-81-5D, 1,2,3-Propanetriol, esters with fatty acids 57-55-6D, 1,2-Propanediol, esters with fatty acids 64-17-5, Ethanol, biological studies 110-44-1, Sorbic acid 151-41-7, Lauryl sulfate 9000-69-5, Pectin 9012-76-4, Chitosan (food preservatives containing bacteriocins and carboxylates and)

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

L97 ANSWER 12 OF 24 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1995:741060 HCAPLUS Full-text

DOCUMENT NUMBER: 123:142365

ORIGINAL REFERENCE NO.: 123:25353a,25356a

TITLE: Food preservatives containing Leuconostoc bacteriocins, sugars, alcohols, and carboxylates Yajima, Mizuo

INVENTOR(S): Asama Kasei Kk, Japan

PATENT ASSIGNEE(S): Jpn. Kokai Tokkyo Koho, 9 pp.

SOURCE: CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07115949	A	19950509	JP 1993-289748	19931027
			<--	
JP 3040294	B2	20000515	JP 1993-289748	19931027
			<--	

PRIORITY APPLN. INFO.: JP 1993-289748 19931027

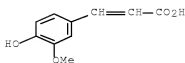
ED Entered STN: 17 Aug 1995

AB A preservative contains a bacteriocin produced by Leuconostoc and  $\geq 1$  compound selected from the group comprising carboxylates, fatty acid esters, amino acids, peptides, sugars, essential oils, and alcs. For example, a bacteriocin 0.3 and Na acetate 0.5 % by weight were added to a hamburger mixture for preservation.

IT 1135-24-6, Ferulic acid (food preservatives containing bacteriocins and carboxylates)

RN 1135-24-6 HCAPLUS

CN 2-Propenoic acid, 3-(4-hydroxy-3-methoxyphenyl)- (CA INDEX NAME)



IT 9000-69-5, Pectin 9012-76-4,  
Chitosan  
(food preservatives containing bacteriocins and carboxylates and)  
RN 9000-69-5 HCAPLUS  
CN Pectin (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
RN 9012-76-4 HCAPLUS  
CN Chitosan (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
IPCI A23L0003-3526 [ICM,6]; A23L0003-3463 [ICM,6,C\*]  
IPCR A23L0003-3463 [I,C\*]; A23L0003-3526 [I,A]; C12P0001-04 [I,C\*];  
C12P0001-04 [I,A]; C12R0001-01 [N,A]  
CC 17-6 (Food and Feed Chemistry)  
IT 50-21-5, Lactic acid, biological studies 56-40-6, Glycine,  
biological studies 56-41-7, Alanine, biological studies 56-87-1,  
L-Lysine, biological studies 56-89-3, Cystine, biological studies  
64-18-6, Formic acid, biological studies 64-19-7, Acetic acid,  
biological studies 72-18-4, Valine, biological studies 72-19-5,  
Threonine, biological studies 74-79-3, Arginine, biological studies  
77-92-9, biological studies 87-69-4, biological studies 109-52-4,  
Valeric acid, biological studies 110-15-6, Butanedioic acid,  
biological studies 110-17-8, 2-Butenedioic acid (E)-, biological  
studies 110-94-1, Pentanedioic acid 124-04-9, Hexanedioic acid,  
biological studies 127-17-3, Pyruvic acid, biological studies  
144-62-7, Ethanedioic acid, biological studies 331-39-5, Caffeic  
acid 499-44-5, Hinokitiol 621-82-9, Cinnamic acid, biological  
studies 685-73-4D, Galacturonic acid, oligo- 1135-24-6,  
Ferulic acid 6915-15-7, Malic acid 9001-63-2,  
Lysozyme 25104-18-1, Polylysine  
(food preservatives containing bacteriocins and carboxylates)  
IT 56-81-5D, 1,2,3-Propanetriol, esters with fatty acids 57-55-6D,  
1,2-Propanediol, esters with fatty acids 64-17-5, Ethanol,  
biological studies 110-44-1, Sorbic acid 151-41-7, Lauryl sulfate  
9000-69-5, Pectin 9012-76-4,  
Chitosan

(food preservatives containing bacteriocins and carboxylates and)  
OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS  
RECORD (1 CITINGS)

L97 ANSWER 13 OF 24 HCAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 1995:741059 HCAPLUS Full-text  
DOCUMENT NUMBER: 123:142364  
ORIGINAL REFERENCE NO.: 123:25353a,25356a  
TITLE: Food preservatives containing Lactobacillus  
bacteriocins, sugars, alcohols, and carboxylates  
Kanetani, Kazuo; Oshimura, Masao; Harada,  
Masayuki; Yajima, Mizuo

PATENT ASSIGNEE(S): Tamon Shuzo Kk, Japan; Asama Kasei Kk  
 SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07115948	A	19950509	JP 1993-289747	19931027
			<--	
JP 3040293	B2	20000515	JP 1993-289747	19931027
			<--	

PRIORITY APPLN. INFO.:

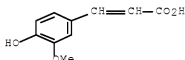
ED Entered STN: 17 Aug 1995

AB A preservative contains a bacteriocin produced by Lactobacillus and  $\geq 1$  compound selected from the group comprising carboxylates, amino acids, peptides, sugars oils, and alcs. For example, a bacteriocin 0.3 and Na acetate 0.5 % by weight were added to a hamburger mixture for preservation.

IT 1135-24-6, Ferulic acid  
 (food preservatives containing bacteriocins and carboxylates)

RN 1135-24-6 HCAPLUS

CN 2-Propenoic acid, 3-(4-hydroxy-3-methoxyphenyl)- (CA INDEX NAME)



IT 9000-69-5, Pectin 9012-76-4,  
 Chitosan  
 (food preservatives containing bacteriocins and carboxylates and)

RN 9000-69-5 HCAPLUS

CN Pectin (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 9012-76-4 HCAPLUS

CN Chitosan (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IPCI A23L0003-3526 [ICM,6]; A23L0003-3463 [ICM,6,C\*]  
 IPCR A23L0003-3463 [I,C\*]; A23L0003-3526 [I,A]; C12P0001-04 [I,C\*];  
 C12P0001-04 [I,A]; C12R0001-225 [N,A]

CC 17-6 (Food and Feed Chemistry)  
 Section cross-reference(s): 10

IT 50-21-5, Lactic acid, biological studies 56-40-6, Glycine,  
 biological studies 56-41-7, Alanine, biological studies 56-87-1,  
 L-Lysine, biological studies 56-89-3, Cystine, biological studies  
 64-18-6, Formic acid, biological studies 64-19-7, Acetic acid,  
 biological studies 72-18-4, Valine, biological studies 72-19-5,  
 Threonine, biological studies 74-79-3, Arginine, biological studies  
 77-92-9, biological studies 87-69-4, biological studies 109-52-4,  
 Valeric acid, biological studies 110-15-6, Butanedioic acid,  
 biological studies 110-17-8, 2-Butenedioic acid (E)-, biological

studies 110-94-1, Pentanedioic acid 124-04-9, Hexanedioic acid, biological studies 127-17-3, Pyruvic acid, biological studies 144-62-7, Ethanedioic acid, biological studies 331-39-5, Caffeic acid 499-44-5, Hinokitiol 621-82-9, Cinnamic acid, biological studies 685-73-4D, D-Galacturonic acid, oligo- 1135-24-6, Ferulic acid 6915-15-7, Malic acid 9001-63-2, Lysozyme 25104-18-1, Polylysine (food preservatives containing bacteriocins and carboxylates)

IT 56-81-5, 1,2,3-Propanetriol, biological studies 57-55-6, 1,2-Propanediol, biological studies 64-17-5, Ethanol, biological studies 110-44-1, Sorbic acid 151-41-7, Lauryl sulfate 9000-69-5, Pectin 9012-76-4, Chitosan (food preservatives containing bacteriocins and carboxylates and)

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L97 ANSWER 14 OF 24 HCAPLUS COPYRIGHT 2010 ACS ON STN

ACCESSION NUMBER: 1995:840265 HCAPLUS Full-text

DOCUMENT NUMBER: 123:337971

ORIGINAL REFERENCE NO.: 123:60661a,60664a

TITLE: Influence of alkaline pre-treatments on the cell wall components of wheat straw  
Sun, Runcang; Mark Lawther, J.; Banks, W. B.  
CORPORATE SOURCE: School Agricultural and Forest Sciences, University Wales, Bangor/Gwynedd, LL57 2UW, UK  
SOURCE: Industrial Crops and Products (1995), 4(2), 127-45  
CODEN: ICRDEW; ISSN: 0926-6690

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 07 Oct 1995

AB The effects of alkaline pre-treatments of wheat straw have been examined in detail. In particular, treatments with increasing amts. of sodium hydroxide at a range of temps. and exposure times have been investigated. A number of other alkaline or oxidizing agents have also been utilized and briefly assessed. Optimal conditions for delignification and dissoln. of hemicellulosic polysaccharides were found to be pre-treatment with 1.5% sodium hydroxide for 144 h at 20°C. This resulted in release of 60% and 80% of lignin and hemicellulose, resp. The residues of the pre-treated wheat straw were sequentially extracted with 0.25% ammonium oxalate for the isolation of pectin, acidic sodium chlorite solution for delignification and 24% potassium hydroxide with 2% boric acid (2 h at 20°C) for the determination of remaining hemicellulose and  $\alpha$ -cellulose. The yields were determined by gravimetric anal. and expressed as a proportion of the starting material. It was found that xylose was the major sugar constituent in all the hemicellulose fractions and the hydrolyzates obtained from pre-treatment, while glucose and galactose were present as minor components. The content of arabinose was higher in all the pre-treatment hydrolyzates than in hemicellulose fractions isolated from the residues, whereas the relative amount of xylose in remaining hemicellulose was higher than in the hydrolyzates material. The content of uronic acid and the range of mol. wts. both in remaining hemicellulose and in hydrolyzate fractions were also studied. The contents of phenolic acids and aldehydes remaining both in 0.5 h pre-treated (1.5% sodium hydroxide) wheat straw hemicellulose and cellulose were 0.15%.

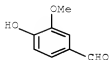
IT 121-33-5, Vanillin 1135-24-6,

Ferulic acid

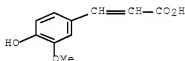
(influence of alkaline pre-treatments on the cell wall components of wheat straw)



RN 121-33-5 HCAPLUS  
 CN Benzaldehyde, 4-hydroxy-3-methoxy- (CA INDEX NAME)



RN 1135-24-6 HCAPLUS  
 CN 2-Propenoic acid, 3-(4-hydroxy-3-methoxyphenyl)- (CA INDEX NAME)



IT 9000-69-5, Pectins  
 (influence of alkaline pre-treatments on the cell wall components of  
 wheat straw)  
 RN 9000-69-5 HCAPLUS  
 CN Pectin (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
 CC 17-11 (Food and Feed Chemistry)  
 IT 50-99-7, Glucose, biological studies 58-86-6, Xylose, biological  
 studies 59-23-4, Galactose, biological studies 99-50-3,  
 Protocatechuic acid 121-33-5, Vanillin  
 121-34-6, Vanillic acid 134-96-3, Syringaldehyde 147-81-9,  
 Arabinose 149-91-7, Gallic acid, biological studies 498-02-2,  
 Acetovanillone 530-57-4, Syringic acid 621-82-9, Cinnamic acid,  
 biological studies 1135-24-6, Ferulic  
 acid 3615-41-6, Rhamnose 25429-38-3, Coumaric acid  
 28777-87-9, Hydroxybenzaldehyde 29656-58-4, Hydroxybenzoic acid  
 (influence of alkaline pre-treatments on the cell wall components of  
 wheat straw)  
 IT 9000-69-5, Pectins 9004-34-6, Cellulose,  
 processes 9005-53-2, Lignin, processes 9034-32-6, Hemicellulose  
 (influence of alkaline pre-treatments on the cell wall components of  
 wheat straw)  
 OS.CITING REF COUNT: 81 THERE ARE 81 CAPLUS RECORDS THAT CITE THIS  
 RECORD (81 CITINGS)

L97 ANSWER 15 OF 24 HCAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1992:152336 HCAPLUS Full-text  
 DOCUMENT NUMBER: 116:152336  
 ORIGINAL REFERENCE NO.: 116:25809a,25812a  
 TITLE: Synthesis of perillartine analogs and evaluation  
 of their taste  
 AUTHOR(S): Kayahara, Hiroshi; Kawakami, Akira; Okutani,  
 Yoshihiko; Nakanishi, Ushio; Tadasa, Koji  
 CORPORATE SOURCE: Fac. Agric., Shinshu Univ., Nagano, 399-45, Japan

SOURCE: Shinshu Daigaku Nogakubu Kiyo (1991),  
28(1), 35-44  
CODEN: SDNOAM; ISSN: 0583-0621  
DOCUMENT TYPE: Journal  
LANGUAGE: Japanese

ED Entered STN: 17 Apr 1992

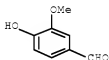
AB Based on Schallenberger's theory of sweetness in which 3 functional groups, namely an electron donor (AH) group, an electron acceptor (B) group, and a hydrophobic (X) group are required for sweetness, several Schiff bases (I) of perillaldehyde, PhCHO, cumin aldehyde and vanillin with aniline, hydroxyaniline, and D-glucosamine and N-acylated amino acid (II) derivs. using serine, threonine and organic acids such as perillic acid, camminic acid, phenylacetic acid, vanillic acid, trans-cinnamic acid, and ferulic acid, were synthesized. Although I had no taste, most II with the C-terminus protected had a bitter taste and those with the C-terminus unprotected had a sour taste, N-feruloyl-L-serine Me ester and N-feruloyl-L-threonine Me ester (III) had nearly the sweetness of sucrose. Thus, to a CH<sub>2</sub>Cl<sub>2</sub> (30 mL) solution of 10 mmol ferulic acid were added under ice-cooling H-Thr-OMe.HCl 10, Et<sub>3</sub>N 10, and hydroxybenzotriazole 10, and after stirring 11 mol EtN:C:N(CH<sub>2</sub>)<sub>3</sub>NMe<sub>2</sub> was added, and the mixture was stirred for 2 h at 0° and overnight at room temperature to give, after work-up and crystallization, 54.65% III.

IT 121-33-5

(Schiff base formation of, with (hydroxy)amine or glucosamine)

RN 121-33-5 HCAPLUS

CN Benzaldehyde, 4-hydroxy-3-methoxy- (CA INDEX NAME)

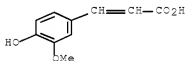


IT 1135-24-6, Ferulic acid

(acylation by, of serine or threonine Me ester)

RN 1135-24-6 HCAPLUS

CN 2-Propenoic acid, 3-(4-hydroxy-3-methoxyphenyl)- (CA INDEX NAME)



IT 9012-76-4DP, Chitosan, Schiff base adduct with perillaldehyde

(preparation and sweetness testing of)

RN 9012-76-4 HCAPLUS

CN Chitosan (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CC 34-3 (Amino Acids, Peptides, and Proteins)

Section cross-reference(s): 17

ST perillaldehyde Schiff base; sweet taste perillartine analog;

ferulic acid amino acid sweetener

IT Amino acids, preparation  
(N-feruloyl derivs. and analogs preparation and sweetness testing of)

IT Sweetening agents  
(N-feruloylserine or -threonine Me esters)

IT 100-52-7P, Benzaldehyde, preparation 121-33-5 122-03-2  
2111-75-3, Perillaldehyde  
(Schiff base formation of, with (hydroxy)amine or glucosamine)

IT 103-82-2, Phenylacetic acid, reactions 121-34-6, Vanillic acid  
140-10-3, trans-Cinnamic acid, reactions 536-66-3  
1135-24-6, Ferulic acid 7694-45-3,  
Perillic acid  
(acylation by, of serine or threonine Me ester)

IT 538-51-2P, N-Benzylideneaniline 588-53-4P,  
N-Benzylidene-p-hydroxyaniline 2752-53-6P, N-Phenylacetyl-L-serine  
2798-50-7P, N-Phenylacetyl-L-threonine 3230-45-3P,  
N-Benzylidene-o-hydroxyaniline 6076-10-4P 9012-76-4DP,  
Chitosan, Schiff base adduct with perillaldehyde 17693-88-8P  
17696-53-6P 18277-39-9P 23837-31-2P 27998-04-5P 51821-39-7P  
65414-91-7P, N-Phenylacetyl-L-serine methyl ester 85065-25-4P  
109514-99-0P 130733-22-1P, N-trans-Cinnamoyl-L-serine 139600-00-3P  
139600-01-4P 139600-02-5P 139600-03-6P 139600-04-7P  
139600-05-8P 139600-06-9P 139600-07-0P 139600-08-1P  
139600-09-2P 139600-10-5P 139600-11-6P 139600-12-7P  
139600-13-8P 139600-14-9P 139600-15-0P 139600-16-1P,  
N-Phenylacetyl-L-threonine methyl ester 139600-17-2P 139600-18-3P  
139600-19-4P 139600-20-7P 139600-21-8P 139600-22-9P  
139600-23-0P 139606-32-9P, N-trans-Cinnamoyl-L-threonine methyl  
ester 139606-33-0P, N-trans-Cinnamoyl-L-threonine 139606-34-1P  
139684-24-5P, N-trans-Cinnamoyl-L-serine methyl ester 139684-25-6P  
(preparation and sweetness testing of)

OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS  
RECORD (2 CITINGS)

=> d 16-21 full

L97 ANSWER 16 OF 24 WPIX COPYRIGHT 2010 THOMSON REUTERS on STN  
AN 2008-N01385 [200876] WPIX Full-text  
TI Producing ferulic acid comprises cultivating encapsulated  
live feruloyl esterase producing cells in a culture media  
DC A97; B05; D13; D15; D16; D21; D22; E14; F09  
IN BHATHENA J; PRAKASH S  
PA (UMCG-C) UNIV MCGILL ROYAL INST ADVANCEMENT  
CYC 121  
PI WO 2008116319 A1 20081002 (200876)\* EN 40[7]  
ADT WO 2008116319 A1 WO 2008-CA585 20080327  
PRAI US 2007-908222P 20070327  
IPCI A21D0002-00 [I,A]; A21D0002-00 [I,C]; A23K0001-165 [I,A]; A23K0001-165  
[I,C]; A23L0003-3463 [I,A]; A23L0003-3463 [I,C]; A61K0038-43 [I,C];  
A61K0038-46 [I,A]; A61K0008-30 [I,C]; A61K0008-66 [I,A]; A61P0031-00  
[I,A]; A61P0031-00 [I,C]; C02F0011-02 [I,A]; C02F0011-02 [I,C];  
C12G0001-00 [I,C]; C12G0001-022 [I,A]; C12N0011-00 [I,C]; C12N0011-02  
[I,A]; C12N0009-16 [I,A]; C12N0009-16 [I,C]; C12P0007-40 [I,C];  
C12P0007-42 [I,A]; D21C0009-10 [I,A]; D21C0009-10 [I,C]  
EPC C12N0011-04; C12P0007-42  
AB WO 2008116319 A1 UPAB: 20100101

NOVELTY - Producing ferulic acid comprises cultivating encapsulated live feruloyl esterase producing cells in a culture media, where the cells are encapsulated in semipermeable polymeric microcapsules.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are:

(1) a process of food preparation, the improvement consisting in the use of encapsulated live feruloyl esterase producing cells, where the cells are encapsulated in semipermeable polymeric microcapsules and are producing ferulic acid;

(2) an of encapsulated live feruloyl esterase producing cells in food processes or industrial processes, where the cells are encapsulated in semipermeable polymeric microcapsules and are producing ferulic acid, where the food processes comprises at least one selected from modification of plant-based food texture, baking industry, generation of fine chemicals from food waste, animal nutrition, or wine making, and where the industrial processes comprises at least one selected from bleaching high quality paper pulps, anti-aging agents, antibacterial activity items, fragrances, control of germination, or bioconversion of agricultural waste; and

(3) a method of producing the precursor of vanillin by cultivating encapsulated live feruloyl esterase producing cells in a culture medium, where the cells are encapsulated in semipermeable polymeric microcapsules.

USE - The encapsulated live feruloyl esterase producing cells are used in food processes selected from modification of plant-based food texture, baking industry, generation of fine chemicals from food waste, animal nutrition, or wine making, or in industrial processes selected from bleaching high quality paper pulps, anti-aging agents, antibacterial activity items, fragrances, control of germination, or bioconversion of agricultural waste. The methods are useful for producing ferulic acid and for producing the precursor of vanillin (all claimed).

ADVANTAGE - The present invention provides novel process for the bioproduction of ferulic acid which can be operated in a continuous mode and does not require a cleaning and reloading of the bioreactor.

TECH BIOTECHNOLOGY - Preferred Process: The process for producing ferulic acid further comprises isolating ferulic acid from the culture media. The process is a continuous process. The live feruloyl esterase producing cells are feruloyl esterase producing bacteria, feruloyl esterase producing yeast cells and feruloyl esterase producing genetically engineered cells. The live feruloyl esterase producing bacteria are feruloyl esterase producing *Lactobacillus* or *Bacillus* bacterial cells. The feruloyl esterase producing *Lactobacillus* or *Bacillus* bacterial cells are chosen from *Lactobacillus fermentum* 11976, *Lactobacillus leichmanni* (NCIMB 7854), *Lactobacillus farciminis* (NCIMB 11717), *Lactobacillus fermentum* (NCFB 1751), *Lactobacillus fermentum* (NCIMB 2797), *Lactobacillus reuteri* (NCIMB 11951), *Bacillus subtilis* (FMCC 193), *Bacillus subtilis* (FMCC 267), *Bacillus subtilis* (FMCC PL-1), *Bacillus subtilis* (FMCC 511), *Bacillus subtilis* (NCIMB 11034), *Bacillus subtilis* (NCIMB 3610), *Bacillus pumilis* (ATCC 7661), *Bacillus sphaericus* (ATCC 14577), or *Bacillus licheniformis* (ATCC 14580). The feruloyl esterase producing *Lactobacillus* or *Bacillus* bacterial cells are chosen from *Lactobacillus fermentum* 11976 bacterial cells, *Lactobacillus fermentum* 14932, *Lactobacillus reuteri* 23272, or *Lactobacillus farciminis* 29645. The live feruloyl esterase producing yeast cells are feruloyl esterase producing *Aureobasidium*, *Pichia*, *Candida*, *Rhodotorula*, or *Saccharomyces* yeast cells, or feruloyl esterase producing genetically engineered cells. The microcapsules are made of a material chosen from Alginate-Poly-L-lysine-Alginate (APA), Alginate-Chitosan (AC), Alginate-Chitosan -Polyethylene glycol (PEG)-Poly-L-lysine (PLL)-Alginate (ACPPA), Alginate-Poly-L-lysine-PEG-Alginate (APPA), Alginate-Chitosan

-PEG (ACP), Alginate-Poly-L-lysine-Pectinate  
 -Poly-L-lysine-Alginate (APPPA), Genipin cross-linked alginate-chitosan (GCAC). The microcapsules are made of  
 Alginate-Poly-L-lysine-Alginate (APA).

ABEX EXAMPLE - No suitable example given.

FS CPI

MC CPI: A12-W05; B10-C03; B10-D01; B11-A01A; B11-A01C; B11-A02C1;  
 B11-B03; B12-M11C; B12-M18; D03-G; D03-H01T2A; D04-A01J;  
 D08-B09A3; D09-A01; E10-C03; E10-D01C; F05-A02B

L97 ANSWER 17 OF 24 WPIX COPYRIGHT 2010 THOMSON REUTERS on STN

AN 2005-132663 [200514] WPIX Full-text

DNC C2005-043788 [200514]

TI Producing a plant secondary metabolite of interest comprises including within the suspension culture an amount of adsorbent and one or more elicitor agents suitable to increase production of the secondary metabolite.

DC C06; D16

IN FRANCO C M M; ZHANG W

PA (ALBR-C) ALBRIGHT & WILSON AUSTRALIA; (CSIR-C) COMMONWEALTH SCI & IND  
 RES ORG; (TRID-N) TRIDAN LTD; (UYSA-N) UNIV FLINDERS SOUTH AUSTRALIA;  
 (UYME-C) UNIV MELBOURNE

CYC 106

PI WO 2005012507 A1 20050210 (200514)\* EN 104[21]

ADT WO 2005012507 A1 WO 2004-AU991 20040723

FRAI AU 2003-903909 20030725

IPCR A01H0004-00 [I,A]; A01H0004-00 [I,C]; C12N0005-00 [I,A]; C12N0005-00

[I,C]; C12N0005-02 [I,A]; C12N0005-02 [I,C]; C12N0005-04 [I,A];

C12N0005-04 [I,C]; C12P0007-02 [I,C]; C12P0007-22 [I,A]

EPC A01H0004-00B; C12N0005-00M1; C12N0005-04; C12P0007-22

AB WO 2005012507 A1 UPAB: 20050708

NOVELTY - Producing a plant secondary metabolite of interest comprises including within the suspension culture an amount of adsorbent and one or more elicitor agents suitable to increase production of the secondary metabolite.

DETAILED DESCRIPTION - The method comprises:

(a) cultivating by suspension culture in a suitable nutrient medium plant cells that produce the secondary metabolite;

(b) including within the suspension culture an amount of adsorbent and one or more elicitor agents suitable to increase production of the secondary metabolite; and recovering the secondary metabolite from the suspension culture.

INDEPENDENT CLAIMS are also included for:

(1) a secondary metabolite product produced by the;

(2) a method of producing a stilbene plant secondary metabolite of interest comprising cultivating by suspension culture in a suitable nutrient medium plant cells that produce a stilbene secondary metabolite; including within the suspension culture an amount of adsorbent and one or more elicitor agents suitable to increase production of the stilbene; and recovering the stilbene from the suspension culture; and

(3) a stilbene plant secondary metabolite produced by the method.

USE - The method comprises producing secondary plant metabolites (claimed) using adsorption and elicitation in cell suspension culture.

TECH BIOTECHNOLOGY - Preferred Method: In producing a plant secondary metabolite of interest, the cells are derived from suspension cell culture. The cells or those from which they are derived have been subjected to genetic manipulation. The callus culture has been established in a solidified callus induction medium from plant explants of a species that produces the secondary metabolite. The cells are derived from one or more of the following plant species: *Atropa bella donna*, *Erythrina flabelliformis*, *Ipomoea tricolor*,

*Erythrina crista*, *Celosia cristata*, *Gallium spurium*, *Laurus nobilis*,  
*Vitis labrusca*, *Vitis vinifera*, *Gratiola officinalis*, *Symphitum*  
*officinale*, *Hosta fortunei*, *Cassia hebecarpa*, *Thalictrum flavum*,  
*Scutellaria altissima*, *Portulacca oleracea*, *Scutellaria certicola*,  
*Physalis* sp., *Geum fauriei*, *Gentiana tibetica*, *Linum hirsutum*,  
*Aconitum napellus*, *Podophyllum emodii*, *Thymus cretaceus*, *Carina*  
*acaulis*, *Chamaecrista fasciculata*, *Pinus pinea*, *Peganum harmala*,  
*Tamarindus indica*, *Carica papaya*, *Cistus incanus*, *Capparis spinosa*,  
*Cupressus lusitanica*, *Diospyros kaki*, *Eryngium campestre*, *Aesculus*  
*woerlitzensis*, *Aesculus hippocastanum*, *Cupressus sempervirens*, *Celtis*  
*occidentalis*, *Polygonum cuspidatum*, *Elaeagnus angustifolia*, *Elaeagnus*  
*commutata*, *Gentiana macrophylla*, *Brassica rapa*, *Sesbania exaltata*,  
*Sesbania speciosa*, *Spartina potentiflora*, *Brassica juncea*, *Helianthus*  
*annuus*, *Poinsettia* sp., *Pelargonium zonale*, *Synapsis* sp., *Leontopodium*  
*alpinum*, *Lupinus luteus*, *Buxus microphylla* var. *japonica*, *Liatris*  
*spicata*, *Primula japonica*, *Betula nigra*, *Filipendula vulgaria*, *Lobelia*  
*siphilitica*, *Grevillea robusta*, *Reseda luteola*, *Gentiana littoralis*,  
*Campanula carpatia*, *Ageratum conyzoides*, *Psidium guajava*, *Ailanthus*  
*altissima*, *Hydrocotyle asiatica*, *Brugmansia suaveolens*, *Thymus*  
*pulegioides*, *Thymus lema-barona*, *Thymus serpyllum* (wild), *Gaultheria*  
*procumbens*, *Thymus camosus*, *Thymus thracicus*, *Calycanthus floridus*,  
*Zin giber officinalis*, *Lamium dulcis*, *Thymus praecox arcticus*, *Thymus*  
*speciosus*, *Thymus pseudolamginosus*, *Thymus vulgaris*, *Ficus religiosa*,  
*Forsythia suspensa*, *Chelidonium majus*, *Thymus wooly*, *Thymus*  
*portugallense*, *Nicotiana tabacum*, *Thymus cythriodorus aureus*, *Cactus*  
*officinalis*, *Lablab purpurea*, *Juglans regia*, *Actinidia chinensis*,  
*Hemerocallis* sp., *Betula pendula*, *Gardenia jasminoides*, *Taxodium*  
*distichum*, *Magnolia loebherii*, *Crataegus praegophyllum*, *Larix decidua*,  
*Thuja orientalis*, *Thuja occidentalis*, *Cupressocyparis leylandii*,  
*Pseudotsuga menziesii*, *Abies firma*, *Parthenocissus quinquefolia*,  
*Allium comum*, *Juniperus blue pacific*, *Taraxacum officinalis*, *Yucca*  
*sp.*, *Tsuga canadensis*, *Ilex aquifolium*, *Ilex comuta*, *Taxus hicksii*,  
*Taxus media*, *Metasequoia glyptostroboides*, *Pinus bungeana*, *Buxus*  
*sempervirens*, *Stewartia koreana*, *Prunus* sp., *Betula dahurica*, *Plantago*  
*minor*, *Acer palmatum*, *Acer campestre*, *Cotinus coggygria*, *Quercus robur*,  
*Acer truncatum*, *Achyranthes bidentata*, *Allium japonicum*, *Carum co-*  
*sium*, *Agastache mexicana*, *Prunella vulgaris*, *Tagetes minuta*, *Nepeta*  
*cataria*, *Ratibida columnaris*, *Aster novae angliae*, *Myrica cerifera*,  
*Pittosporum tobira*, *Plantago major*, *Pinus sylvestris*, *Acorus*  
*canadensis*, *Pieris japonica*, *Pinus strobus*, *Trifolium pratense*, *Prunus*  
*serotina*, *Datura stramonium*, *Geranium maculatum*, *Hydrocotyle asiatica*,  
*Astragalus sinicus*, *Centaurea maculata*, *Ruschia indurata*, *Myrrhus*  
*communis*, *Platanus occidentalis*, *Licium barba turn*, *Lavandula*  
*officinalis*, *Grevillea robusta*, *Hypophae rhamnoides*, *Filipendula*  
*ulmaria*, *Betula pendula*, *Polygonum odoratum*, *Brugmansia graveolens*,  
*Rhus toxicodonta*, *Armoracia rusticana*, *Ficus benjaminii*, *Sufflera*  
*sp.*, *Baikiaea recurvata*, *Asimina triloba*, *Lippia dulcis*, *Epilobium*  
*augustifolium*, *Brugmansia suaveolens*, *Xanthosoma sagittifolium*,  
*Monstera deliciosa*, *Aglaonema commutatum*, *Dieffenbachia leopoldii*,  
*Anthurium andreaeanum*, *Syngonium podophyllum*, *Dracaena fragrans*, *Ananas*  
*comosus*, *Strelitzia reginae*, *Dieffenbachia seguine*, *Syngonium auritum*,  
*Dracaena* sp., *Haemanthus katherinae*, *Anthurium altissimum*,  
*Spathiphyllum grandiflorum*, *Spathiphyllum cochlearispatum*, *Monstera*  
*pertusa*, *Anthurium magnificum*, *Anthurium hookeri*, *Anthurium elegans*,  
*Calathea zebrina*, *Yucca elephantipes*, *Bromelia balansae*, *Musa*  
*textilis*, *Myrrhus communis*, *Olea oleaster*, *Olea europaea*, *Nerium*  
*oleander*, *Coccolus laurifolius*, *Microsorium punctatum*, *Sansevieria* sp.,  
*Adansonia digitata*, *Boehmeria biloba*, *Piper nigrum*, *Phymatosorus*  
*scolopendria*, *Tumera ulmifolia*, *Nicodemia diversifolia*, *Tapeinochilos*  
*spectabilis*, *Rauwolfia tetraphylla*, *Ficus elastica*, *Cycas circinalis*,

*Caryota urens*, *Cynnamomum zeylonicum*, *Aechmea luddemanniana*, *Phoenix zeylonica*, *Ficus benjamina*, *Ficus pumila*, *Muraya exotica*, *Trevesia sundaica*, *Clerodendrum speciosissimum*, *Actinidia kolomikta*, *Paeonia lactiflora*, *Paeonia suffruticosa*, *Quercus imbricaria*, *Iris pallida*, *Portulacca olleracea*, *Polygonum aviculare*, *Iris pseudocarpus*, *Ailium nutans*, *Ailium fistulosum*, *Anthericum ramosum*, *Veratrum nigrum*, *Polygonum lapathifolium*, *Hosta lancifolia*, *Hosta sieboldii*, *Echinops sphaerocephalus*, *Paeonia dahurica*, *Inula helenium*, *Crambe pontica*, *Digitalis lutea*, *Baptisia australis*, *Aristolochia australis*, *Hyssopus seravschanicus*, *Teucrium chamaedrys*, *Sedum album*, *Heracleum pubescens*, *Origanum vulgare*, *Cachrys alpina*, *Laser trilobum*, *Matteuccia struthiopteris*, *Sedum telephium*, *Bocconia cordata*, *Ajuga reptans*, *Thalictrum minus*, *Anemone japonica*, *Clematis rectae*, *Alchemilla officinalis*, *Potentilla alba*, *Poterium sanguisorba*, *Menispermum dauricum*, *Oxybaphus nyctagineus*, *Armoracia rusticana*, *Crambe cordifolia*, *Agrimonia eupatoria*, *Anchusa officinalis*, *Polemonium caeruleum*, *Valeriana officinalis*, *Pulmonaria mollissima*, *Stachys lanata*, *Coronilla varia*, *Platycarya grandiflora*, *Lavandula officinalis*, *Vincetoxicum officinale*, *Acalypha hispida*, *Gnetum gnemon*, *Psychotria nigropunctata*, *Psychotria metibac teriodomasica*, *Codiaeum variegatum*, *Phyllanthus grandifolius*, *Pterigota alata*, *Pachyrhizus affinis*, *Sterculia data*, *Philodendron speciosum*, *Pithecellobium unguis-cati*, *Sanchezia nobilis*, *Oreopanax capitatus*, *Ficus triangularis*, *Kigelia pinnata*, *Piper cubeba*, *Laurus nobilis*, *Erythrina caefra*, *Metrosideros excelsa*, *Osmanthus fragrans*, *Cupressus sempervirens*, *Jacobinia* sp., *Senecio platyphylloides*, *Livistona chinensis*, *Tetralinlis articulata*, *Eucalyptus rudis*, *Podocarpus spinulosus*, *Eriobotrya japonica*, *Ginkgo biloba*, *Rhododendron* sp., *Thuja occidentalis*, *Fagopyrum suffruticosum*, *Geum macrophyllum*, *Magnolia kobus*, *Vinca minor*, *Convallaria majalis*, *Corylus avellana*, *Berberis* sp., *Rosa multiflora*, *Ostrya carpinifolia*, *Ostrya connocea*, *Quercus rubra*, *Liriodendron tulipifera*, *Sorbus aucuparia*, *Betula nigra*, *Castanea sativa*, *Bergenia crassifolia*, *Artemisia dracunculoides*, *Ruta graveolens*, *Quercus nigra*, *Schisandra chinensis*, *Betula alba*, *Sambucus nigra*, *Gentiana cruciata*, *Encephalartos horridus*, *Phlebodium aureum*, *Microlepis platyphylla*, *Ceratophyllum mexicanum*, *Stenochlaena tenuifolia*, *Adiantum trapeziforme*, *Adiantum raddianum*, *Lygodium japonicum*, *Pteris caudata*, *Asplenium australasicum*, *Agathis robusta*, *Osmunda regalis*, *Osmundastrum claytonianum*, *Phyllitis scolopendrium*, *Polystichum braunii*, *Cyrtomium fortunei*, *Dryopteris filix-mas*, *Equisetum variegatum*, *Athyrium nipponicum*, *Athyrium filix-femina*, *Parthenocissus tricuspidata*, *Ligusticum vulgare*, *Chamaecyparis parvifolia*, *Rosa canina*, *Cotinus coggygria*, *Celtis occidentalis*, *Picea schrenkiana*, *Cydonia oblonga*, *Ulmus pumila*, *Euonymus verrucosus*, *Deutzia scabra*, *Mespilus germanica*, *Quercus castaneifolia*, *Euonymus europaea*, *Securinega suffruticosa*, *Koeleria paniculata*, *Syringa josikaea*, *Zelkova carpinifolia*, *Abies cephalonica*, *Taxus baccata*, *Taxus cuspidata*, *Salix babylonica*, *Thuja occidentalis*, *Actinidia chinensis*, *Mahonia aquifolium*, *Aralia mandshurica*, *Juglans nigra*, *Euonymus data*, *Prinosia sinensis*, *Forsythia europaea*, *Sorbus aucuparia*, *Podocarpus neriifolius*, *Morus alba*, *Crataegus macrophyllum*, *Eucommia ulmifolia*, *Sorbus commixta*, *Philodendron amurense*, *Cornus mas*, *Kenia japonica*, *Parrotia persica*, *Jasminum fruticans*, *Swidaea guinea*, *Pentaphyllum fruticosum*, *Sibiraea altaianensis*, *Cerasus japonica*, *Kolkwitzia amabilis*, *Amigdalus nana*, *Acer mandshurica*, *Salix tatarica*, *Amelanchier spicata*, *Cerasus mahaleb*, *Prunus cerasifera*, *Corylus avellana*, *Acer tataricum*, *Viburnum opulus*, *Syringa vulgaris*, *Fraxinus excelsior*, *Quercus trojana*, *Chaenomeles superba*, *Pinus salinifolia*, *Berberis vulgaris*, *Cotoneaster horizontalis*, *Cotoneaster fangianus*, *Fagus sylvatica*, *Pinus pumila*, *Pinus sylvestris*,

Berberis thunbergii, Ajuga forrestii, Anisodus acutangulus, Chinchona ledgeriana, Valeriana officinalis, Pegana harmala, Chrysanthemum cinerariaefolium, Tagetes patula, Scopolia japonica, Rauwolfia serpentina, Papaver somniferum, Capsicum frutescens, Fumaria capreolata L., Datura stramonium, Tinospora rumphii, Tripterygium wilfordii, Coptis japonica, Salvia officinalis, Colleus blumei, Catharanthus roseus, Morinda citrifolia, Lithospermum erythrorhizon, Dioscorea deltoidea, Mueuna pruriens, Mirabilis jalapa, Boerhavia diffusa, Camptotheca acuminata, Nothapodytes foetida, Morus nigra, Symphoricarpos albus and Ophiorrhiza pumila. The cells are derived from leaves, fruit, shoots, buds, flowers, bark, roots, branches, stems, seeds, cones, needles or cambium tissue of the plant. The cells are derived from meristematic plant tissue. The secondary metabolite is a stilbene compound. The stilbene compound is trans-resveratrol, cis-resveratrol, trans-piceid, cis-piceid, a trans-resveratrol dehydromer, a cis-resveratrol dehydromer, a trans-pterostilbene, a cis-pterostilbene, a viniferin, trans-piceatannol or (3,5,5N,4N-tetrahydroxystilbene) 3-O-/3-glucoside (trans-astringin). The secondary metabolite produced is trans-resveratrol or cis-resveratrol. The secondary metabolite is an alkaloid compound, a terpenoid compound, an isoprenoid compound, a phenylpropanoid compound, a glucosinolate compound or a pyrenin compound. The plant secondary metabolite is taxol, podophyllotoxin, an indole alkaloid, a beta-carboline alkaloid, 10-hydroxy-N(alpha)-demethyl-19,20-dehydroraucaffine, a terpenoid indole alkaloid, strictosidine, vallesamine, O-acetylvallesamine, voaphylline, camptothecin, 3-oxo-rhazinin, 10-hydroxycampothecin, maytansine, triptolid, harringtonine, homoharringtonine, isoharringtonine, bruceatin, ellipticine, thalicarpine, indicine-N-oxide, baccharin, hyoscyamine, scopalamine, vinblastine, vincristine, catharanthine, vindoline, sanguinarine, norsanguinarine, a valepotriate, atropine, quinidine, a 9-dihydrobaccatin III derivative, rhazinin, tubotaiwine, a phenanthrofliran derivative, ajuforrestine A, reserpine, codeine, thebaine, cryptopine, berberine, a saponin, a sapogenin, ginsenoside, rosmarinic acid, arbutin, ajmalicine, an anthraquinone, artemisin, forskolin, shikonin, an anthocyanin, diosgenin, ubiquinone-10, serpentine, L-DOPA, pyrethrin, thiophene, 6-hydroxytaumacine, capsaicin, ruine or serotonin. The sub-culturing is conducted weekly, fortnightly or monthly. The method is conducted a batch process, or in a semi-continuous or continuous process. The semi-continuous process is operated in a fed-batch or a repeated-batch mode. The elicitor agents are selected from one or more of biotic elicitors, microbial fractions or products derived from biotic elicitors, and abiotic elicitors. The biotic elicitors are selected from one or more Botrytis cinerea, Phytophthora megasperma, Pinella stripticum, Oligosporus sp., Pythium mamillatum, Pythium sylvaticum, Verticillium dahliae, Verticillium sp., Penicillium minioluteum, Phytophthora lateralis, Cytophora cincta, Cytophora leucostoma, Alternaria brassicicola, Alternaria solani, Alternaria cucumerina, Botrytis squamosa, Cochliobolus heterostrophus, Colletotrichum trifolii, Colletotrichum orbiculatum, Colletotrichum graminicola, Colletotrichum gloeosporioides, Cylindrocyladium floridanum, Fusarium crookwellense, Fusarium heterosporium, Fusarium oxysporum f. sp. conglutinans, Fusarium oxysporum f. sp. lycopersici, Fusarium oxysporum f. sp. pisi, Gibberella zeae, Gaumannomyces graminis var. tritici, Geotrichum sp., Leptosphaeria torrae, Nectria haematococca MPV1, Mycosphaerella pinodes, Ophiostoma ulmi, Phoma lingam, Phoma pinodella, Phytophthora infestans, Pythium aristosporum, Pythium graminicola, Pythium ultimum, Rhizoctonia solani, Sclerotinia sp., S. nodorum D-45, Trametes versicolor, Ustilago maydis, Venturia inequalis. The microbial



fractions or products derived from biotic elicitors are selected from one or more of Chitosan, Lichenan, Glucomannan, Pleuran, Glucan, Carboxymethylglucan, Hydroxymethylglucan, Sulfethylglucan, Mannan, Xylan, Mannobiose, Mannotriose, Mannopentaose, Mannotetraose, Cellulysin, Multifect XL, Multifect CL, Resinase, Pulpzyme, SP431, Pectinol, Rapidase, Klerzyme, or Chitinase. The abiotic elicitors are selected from one or more of: Arachidonic acid, Elaidic acid, Cyclic AMP, Dibutyl Cyclic AMP, Methyl Jasmonate, Cis-Jasmonate, Jasmonic acid, /3-glucan, Miconazole, Ferulic acid, AMO-1618, Triton X-100, Benzoic acid, Salicylic acid, Propyl gallate, Sesamol, Chlorocholine chloride, 3,4-dichlorophenoxy tri ethyl-, (amine), Chloroethylphosphonic acid, Diethyldithiocarbamic acid, Nordihydroguaiaretic acid, Dithiothreitol, Sodium metabisulfite, Potassium metabisulfite, d-amino-DL-Phenylalanine, Vanadyl sulfate, Uniconazole, Paclobutrazol, Spermine, Spermidine, Putrescine, Cadavarine, Protamine Sulfate, SKF-7997, MER 29, Ancymidol, Triadimefon, Phosphon D, Thiourea, Dextran Sulfate, Hydroquinone, Chitosan glutamate, Fenpropemorph, Prochloraz, Naptifine, EDU, HTA, MPTA, Glutathione, EGTA, Gibberellins, Abscissic Acid, 1,3-Diphenyl urea, Diazolidenyl urea, Phloroglucinol, Sodium alginate, Carrageenan, Aluminium chloride, Ethylene, Acetylsalicylic acid, Sodium chloride, Acetic acid. The elicitors are provided within the suspension culture in a concentration of from about 0.01/1M to about 1 M, or 1M-500mM. The elicitors are added to the suspension culture at a time from the inoculation time to any time during the culture duration. The elicitors are added to the suspension culture at a time from the early exponential growth phase to the stationary phase. There is a second or multiple addition of the elicitors into the suspension culture, conducted between about six hours to about a month in duration after the previous elicitation. The second or multiple addition of elicitors is conducted between about twelve hours to about two weeks in duration after the previous elicitation. The second or multiple addition of elicitors is conducted between about twelve hours to about seven days in duration after the previous elicitation. The adsorbent is included in the suspension culture in an amount of between about 1-500, 20-300, or 50-200 g/L. The adsorbent is added to the suspension culture between the inoculation to any time during the culture duration. The adsorbent is added to the suspension culture between the inoculation to the end of the exponential growth phase. The adsorbent is added in the suspension culture in conjunction with one or a combination of elicitor agents at the same time during the cultivation. The adsorbent is added in the suspension culture in conjunction with one or a combination of elicitor agents at a different time during the cultivation. The nutrient medium comprises one or more of a carbon source, an organic nitrogen source, and inorganic nitrogen source, a macrosalt, a microsalt, a rare trace element, a vitamin, an organic supplement, a plant hormone, a hormone substitute or derivative, a hormone inhibitor, a synthetic growth regulator, a biosynthetic precursor, a metabolic inhibitor, a non-metabolic inhibitor, a stimulant, an activator, an anti-browning agent, an anti-oxidant, a stabilizer, an enhancer, a radical, a scavenger, a conditioner and a reducing agent. The adsorbent material is a macroporous non-ionic cross-linked polymeric material. The adsorbent is selected from one or more of Amberlite (RTM) XAD7, Amberlite (RTM) XAD2, Amberlite (RTM) XAD7HP, Amberlite (RTM) XAD4, Amberlite (RTM) XAD16, Amberlite (RTM) XAD1600, Amberlite FP (RTM) (r), Purasorb AP-250, Purasorb AP-400; Dowex L493, Dowex V493, Dowex L323, Diaion HP20, Diaion HP21, SEPABEADS SP207, SEPABEADS SP70, SEPABEADS SP700, SEPABEADS SP825, SEPABEADS SP850, Diaion HP2MG; SERDOLIT PAD I, SERDOLIT PAD II, SERDOLIT PAD III, SERDOLIT PAD IV, RP-8 (Merck),

Charcoal, activated charcoal, Supelpak-2, Supelpak-2B, Supelite DAX-8, Duolite XAD/61, Dowex, Optipore L493, Poly(styrene-co-divinylbenzene), AMBERSORB 572, AMBERSORB 348F, Dimethylaminomethyl-polystyrene, Poly(4-ethylstyrene-co-divinylbenzene), Florisil, Ferric hydroxide oxide, Sepiolite, Mimetic Green 1 Ligand Affinity Adsorbent, Mimetic Yellow 2 Ligand Affinity Adsorbent, Mimetic Red 2 Ligand Affinity Adsorbent, Mimetic Orange 2 Ligand Affinity Adsorbent, Mimetic Blue 1 Ligand Affinity Adsorbent, Mimetic Blue SA Ligand Affinity Adsorbent, Mimetic Blue 2 Ligand Affinity Adsorbent, Mimetic Orange 3 Ligand Affinity Adsorbent, Mimetic Red 3 Ligand Affinity Adsorbent, Mimetic Blue AP Ligand Affinity Adsorbent, Mimetic Orange 1 Ligand Affinity Adsorbent, Mimetic Yellow 1 Ligand Affinity Adsorbent, Tenax TA5 AMBERCHROM, AMBERJET, AMBERLYST, DUOLITE, MAC HP, Acrylic anion resins, XAD polymeric adsorbents, Phenol- formaldehyde resin, Nuclear grade resins. The adsorbent is in the form of an immiscible liquid phase adsorbent. The immiscible liquid phase adsorbent is selected from one or more of dimethyl siloxane polymer (Silicone antifoam A), polymethoxy silanes, long chain or branched alkane adsorbents and glycol or polyol adsorbents. The secondary metabolite is recovered in an amount at least 800, 1000, 1200 or 1500-fold increased relative to a comparable method of production where adsorbent and elicitor are not included in the suspension culture. The recovery of the secondary metabolite from the suspension culture is achieved by isolating the secondary metabolite from the cells, the adsorbent and the nutrient medium utilizing solvent extraction with a suitable solvent.

FS CPI

MC CPI: C01-D02; C04-A08C2; C04-F08; C05-B02C; C05-C06; C06-H; C07-A02B; C07-B01; C08-D02; C10-A06; C10-B02E; C10-C03; C10-D03; C10-E02; C10-F02; C10-J02; D05-H08; D05-H10; D05-H13

L97 ANSWER 18 OF 24 WPIX COPYRIGHT 2010 THOMSON REUTERS ON STN

AN 2002-294503 [200234] WPIX Full-text

DNC C2002-086557 [200234]

TI Compositions containing heteroxylan and thickening or gelling hydrocolloid, useful as texturizing agents and stabilizers in dispersions, especially foams, e.g. in food, cosmetic or pharmaceutical applications

DC A11; A60; A97; B07; C07; D13; D21; E13; H01

IN BOURRIOT S; DE LONGERIL C; VASLIN S

PA (RHOD-C) RHODIA CHIM; (RHOD-C) RHODIA FOOD SAS

CYC 94

PI FR 2811997 A1 20020125 (200234)\* FR 13|0|

&lt;--

WO 2002008330 A1 20020131 (200234) FR

&lt;--

AU 2001078553 A 20020205 (200236) EN

&lt;--

ADT FR 2811997 A1 FR 2000-9677 20000724; AU 2001078553 A AU

2001-78553 20010720; WO 2002008330 A1 WO 2001-FR2373

20010720

FDT AU 2001078553 A Based on WO 2002008330 A

PRAI FR 2000-9677 20000724

IPCR A23C0013-00 [I,C]; A23C0013-12 [I,A]; A23C0009-13 [I,C]; A23C0009-137 [I,A]; A23G0003-00 [I,A]; A23G0003-00 [I,C]; A23G0003-34 [I,A]; A23G0003-34 [I,C]; A23G0009-32 [I,A]; A23G0009-32 [I,C]; A23G0009-52 [I,A]; A23G0009-52 [I,C]; A23L0001-00 [I,A]; A23L0001-00 [I,C]; A23L0001-10 [I,A]; A23L0001-10 [I,C]; B01F0017-56 [I,A]; B01F0017-56 [I,C]; C08L0005-00 [I,C]; C08L0005-14 [I,A]

EPC A23C0009-137; A23C0013-12; A23G0003-34E+D6; A23G0003-42; A23G0009-34; A23G0009-52+D6; A23L0001-00P16; A23L0001-10E; A61K0008-73;

A61Q0019-00; C08L0005-14; C08L0005-14+B

AB FR 2811997 A1 UPAB: 20060119

NOVELTY - New compositions (A) contain heteroxyylan(s) (I), partially replaced by thickening or gelling hydrocolloid(s) (II).

USE - The use of (A) is claimed as texturing agent in dispersions comprising at least two immiscible phases, specifically where at least one phase is liquid and the other is a gas. Also claimed are dispersions containing (A) (specifically at 0.1-2 weight %), for use in the cosmetic, food, detergent, agrochemical, industrial formulation, pharmaceutical, construction material, drilling fluid or radical polymerization sectors. (A) especially improves the expanding properties of the liquid phase(s) of gas-containing dispersions (i.e. foams), and also improves the shear resistance of the liquid phase(s) and minimizes or suppresses natural aging phenomena (e.g. drainage, Ostwald ripening and coalescence) in the foamed dispersions. More generally (A) have texturizing, expansion promoting, emulsifying, stabilizing and thickening properties. Typically (A) is used in foamed food products such as yogurt, ice cream, fruit puree, chocolate or sauces.

ADVANTAGE - (A) has good texturizing and stabilizing effects at a low concentration. The properties can be controlled by varying the nature and content of (II). In foodstuff applications suitable choice of (I) and (II) can provide excellent organoleptic properties (e.g. mouth-feel and smoothness), so that (A) can totally or completely replace conventional texturizing components such as fats.

TECH POLYMERS - Preferred Composition: (I) is a secondary wall heteroxyylan having a highly branched structure, preferably an arabinoxyylan. In particular (I) is an arabinoxyylan extracted from maize bran and having a main chain of xylose units, 45-60 wt. % of which are substituted by 25-40% arabinose groups, 5-10% galactose groups, 5-10% glucuronic acids and 0-1% residues of ferulic acid (or its salt). (I) has molecular weight 50000-500000 (preferably 100000-350000). (II) is starch, araban, alginate, carrageenan, cellulose (or its derivative), chitosan, dextran, dextrin, fructosan, galactan, galactomannan, gum arabic, pectin, ghatti gum, galactoside, xanthan gum, glucan, glycan, glycogen, hemicellulose, hyaluronic acid, inulin, laminarin, levan, cellulose microfibrils, mannan, pentosan, polydextrose or xylan, especially xanthan gum, carob, carrageenan, pectin or cellulose microfibrils. (A) contains (I) at 50-90 wt. % and (II) at 10-50 wt. %.

ORGANIC CHEMISTRY - Preferred Components: (II) include threose, erythrose, xylose, ribose, desoxyribose, rhamnose, fucose, glucosamine, galactosamine, N-acetyl-glucosamine or N-acetyl-galactosamine.

ABEX EXAMPLE - A foamed acidic yogurt was prepared from heat treated milk by adding 1.1 wt. % (based on milk) of a mixture of arabinoxyylan and xanthan gum in weight ratio 10/1 under stirring. After stirring for a few minutes, the mixture was cooled to 43degreesC, inoculated, fermented for 6 hours and stored at 5degreesC overnight. After 24 hours the mixture was foamed using a mixer then stored in a refrigerator at 5degreesC. The degree of foaming was ca. 100% (i.e. 1 liter of gas in 1 liter of continuous phase). The appearance, texture and taste were at least equivalent to those of conventional gelatin-containing foamed yogurts. The foams were stable, and showed no signs of macroscopic destabilization (drainage) on storage for 28 days.

FS

CPI

MC

CPI: A03-A; A12-V01; A12-W09; A12-W11; B04-A10G; B04-C02A; B04-C02B; B04-C02C; B04-C02D; B07-A02A; B10-A07; B12-M06; B14-R01; C04-A10G; C04-C02A; C04-C02B; C04-C02C; C04-C02D; C07-A02A; C10-A07; C12-M06; C14-R01; D03-H01J; D03-H01Q; D08-B; E07-A02H; H01-B06C

L97 ANSWER 19 OF 24 WPIX COPYRIGHT 2010 THOMSON REUTERS on STN  
 AN 2001-112499 [200112] WPIX Full-text  
 CR 2001-091751  
 DNC C2001-033517 [200112]  
 TI Method for controlling the flux of penetrants across an adaptable  
 semi-permeable barrier is useful for administering an agent to a  
 mammalian body or a plant and for generating an immune response by  
 vaccinating the mammal  
 DC A18; A28; A96; B05; B07; D16; D22; P34  
 IN CEVC G; RICHARDSEN H; WEILAND-WAIBEL A; GEORGE C C; HOLGER R; WEI;  
 WEILAND-WAIBEL A  
 PA (CEVC-I) CEVC G; (IDEA-N) IDEA AG; (RICH-I) RICHARDSEN H; (WEIL-I)  
 WEILAND-WAIBEL A; (IDEA-N) IDEA INNOVATIVE DERMAL APPLICATIONEN GM  
 CYC 93  
 PI WO 2001001963 A1 20010111 (200112)\* EN 110[14]  
 <--  
 AU 2000061557 A 20010122 (200125) EN  
 <--  
 BR 2000012178 A 20020312 (200226) PT  
 <--  
 EP 1189598 A1 20020327 (200229) EN  
 <--  
 CZ 2002000038 A3 20020515 (200241) CS  
 <--  
 CN 1359288 A 20020717 (200268) ZH  
 <--  
 HU 2002001454 A2 20021228 (200308) HU  
 <--  
 JP 2003503442 W 20030128 (200309) JA 109  
 <--  
 US 20030099694 A1 20030529 (200337) EN  
 <--  
 AU 779765 B2 20050210 (200527) EN  
 US 20050123897 A1 20050609 (200538) EN  
 RU 2260445 C2 20050920 (200563) RU  
 IN 2001DN01133 P1 20050311 (200657) EN  
 US 7459171 B2 20081202 (200882) EN  
 US 7591949 B2 20090922 (200962) EN  
 ADT WO 2001001963 A1 WO 2000-EP6367 20000705; AU 2000061557 A  
 AU 2000-61557 20000705; AU 779765 B2 AU 2000-61557  
 20000705; BR 2000012178 A BR 2000-12178 20000705; CN  
 1359288 A CN 2000-809916 20000705; EP 1189598 A1 EP  
 2000-947939 20000705; BR 2000012178 A PCT Application WO  
 2000-EP6367 20000705; EP 1189598 A1 PCT Application WO  
 2000-EP6367 20000705; CZ 2002000038 A3 PCT Application WO  
 2000-EP6367 20000705; HU 2002001454 A2 PCT Application WO  
 2000-EP6367 20000705; JP 2003503442 W PCT Application WO  
 2000-EP6367 20000705; US 20030099694 A1 Cont of WO  
 2000-EP6367 20000705; US 20050123897 A1 Cont of WO  
 2000-EP6367 20000705; RU 2260445 C2 PCT Application WO  
 2000-EP6367 20000705; IN 2001DN01133 P1 PCT Application WO  
 2000-EP6367 20000705; JP 2003503442 W JP 2001-507458  
 20000705; IN 2001DN01133 P1 IN 2001-DN1133 20011206; CZ  
 2002000038 A3 CZ 2002-38 20000705; HU 2002001454 A2 HU  
 2002-1454 20000705; RU 2260445 C2 RU 2002-101651 20000705  
 ; US 20030099694 A1 US 2002-37480 20020104; US 20050123897  
 A1 Cont of US 2002-37480 20020104; US 7459171 B2 US  
 2002-37480 20020104; US 20050123897 A1 US 2004-984450  
 20041108; US 7591949 B2 Cont of WO 1999-EP4659 19990705

; US 7591949 B2 Cont of WO 2000-EP6367 20000705; US 7591949  
 B2 Cont of US 2902-37480 20020104; US 7591949 B2 US  
 2004-984450 20041108

FDT AU 779765 B2 Previous Publ AU 2000061557 A; AU 2000061557 A Based on  
 WO 2001001963 A; BR 2000012178 A Based on WO 2001001963 A; EP 1189598  
 A1 Based on WO 2001001963 A; CZ 2002000038 A3 Based on WO 2001001963  
 A; HU 2002001454 A2 Based on WO 2001001963 A; JP 2003503442 W Based on  
 WO 2001001963 A; AU 779765 B2 Based on WO 2001001963 A; RU 2260445 C2  
 Based on WO 2001001963 A

PRAI WO 1999-EP4659 19990705

ICM A61K0009-127

IPCI A61K0009-127 [I,A]; A61K0009-127 [I,C]; A61K0009-70 [I,A]; A61K0009-70  
 [I,C]; B01D0061-00 [I,A]; B01D0061-00 [N,A]; B01D0061-00 [I,C];  
 B01D0061-00 [N,C]; B01D0063-00 [N,A]; B01D0063-00 [N,C]

IPCR A61F0002-02 [I,A]; A61F0002-02 [I,C]; A61F0002-28 [I,A]; A61F0002-28  
 [I,C]; A61K0031-045 [I,A]; A61K0031-045 [I,C]; A61K0031-05 [I,A];  
 A61K0031-055 [I,A]; A61K0031-14 [I,A]; A61K0031-14 [I,C]; A61K0031-185  
 [I,C]; A61K0031-19 [I,A]; A61K0031-192 [I,A]; A61K0031-28 [I,C];  
 A61K0031-305 [I,A]; A61K0031-452 [I,A]; A61K0031-452 [I,C];  
 A61K0045-00 [I,A]; A61K0045-00 [I,C]; A61K0047-02 [I,A]; A61K0047-02  
 [I,C]; A61K0047-08 [I,A]; A61K0047-08 [I,C]; A61K0047-10 [I,A];  
 A61K0047-10 [I,C]; A61K0047-12 [I,A]; A61K0047-12 [I,C]; A61K0047-14  
 [I,A]; A61K0047-14 [I,C]; A61K0047-16 [I,C]; A61K0047-18 [I,A];  
 A61K0047-22 [I,A]; A61K0047-22 [I,C]; A61K0047-26 [I,A]; A61K0047-26  
 [I,C]; A61K0047-28 [I,A]; A61K0047-28 [I,C]; A61K0047-32 [I,A];  
 A61K0047-32 [I,C]; A61K0047-34 [I,A]; A61K0047-34 [I,C]; A61K0047-36  
 [I,A]; A61K0047-36 [I,C]; A61K0047-38 [I,A]; A61K0047-38 [I,C];  
 A61K0047-42 [I,A]; A61K0047-42 [I,C]; A61K0047-46 [I,A]; A61K0047-46  
 [I,C]; A61K0009-127 [I,A]; A61K0009-127 [I,C]; A61K0009-70 [I,A];  
 A61K0009-70 [I,C]; A61L0027-00 [I,C]; A61L0027-22 [I,A]; A61L0027-26  
 [I,A]; A61L0027-34 [I,A]; A61L0027-48 [I,A]; A61P0001-00 [I,A];  
 A61P0001-00 [I,C]; A61P0001-16 [I,A]; A61P0001-18 [I,A]; A61P0011-00  
 [I,A]; A61P0011-00 [I,C]; A61P0013-00 [I,C]; A61P0013-12 [I,A];  
 A61P0017-00 [I,A]; A61P0017-00 [I,C]; A61P0017-02 [I,A]; A61P0019-00  
 [I,A]; A61P0019-00 [I,C]; A61P0021-00 [I,C]; A61P0021-04 [I,A];  
 A61P0025-00 [I,C]; A61P0025-02 [I,A]; A61P0025-08 [I,A]; A61P0027-00  
 [I,C]; A61P0027-02 [I,A]; A61P0027-16 [I,A]; A61P0029-00 [I,A];  
 A61P0029-00 [I,C]; A61P0003-00 [I,C]; A61P0003-14 [I,A]; A61P0031-00  
 [I,A]; A61P0031-00 [I,C]; A61P0031-04 [I,A]; A61P0007-00 [I,A];  
 A61P0007-00 [I,C]; C12Q0001-00 [I,A]; C12Q0001-00 [I,C]; C12Q0001-18  
 [I,A]; C12Q0001-18 [I,C]

EPC A61K0009-127B2; A61K0009-70E

NCL NCLM 210/645.000; 424/449.000; 435/004.000  
 NCLS 210/321.750; 210/645.000; 210/650.000; 424/094.300; 424/096.300;  
 424/443.000; 424/448.000; 424/449.000; 424/450.000; 435/032.000

FCL A61K0031-045; A61K0031-05; A61K0031-055; A61K0031-14; A61K0031-19;  
 A61K0031-192; A61K0031-305; A61K0031-452; A61K0045-00; A61K0047-02;  
 A61K0047-08; A61K0047-10; A61K0047-12; A61K0047-14; A61K0047-18;  
 A61K0047-22; A61K0047-26; A61K0047-28; A61K0047-32; A61K0047-34;  
 A61K0047-36; A61K0047-38; A61K0047-42; A61K0047-46; A61K0009-127;  
 A61K0009-70 401; A61P0001-00; A61P0001-16; A61P0001-18; A61P0011-00;  
 A61P0013-12; A61P0017-00; A61P0017-02; A61P0019-00; A61P0021-04;  
 A61P0025-02; A61P0025-08; A61P0027-02; A61P0027-16; A61P0029-00;  
 A61P0029-00 101; A61P0003-14; A61P0031-00; A61P0031-04; A61P0007-00

FTRM 4C076; 4C084; 4C086; 4C201; 4C206; 4C086/AA01; 4C206/AA01; 4C086/AA02;  
 4C206/AA02; 4C084/AA17; 4C076/AA19; 4C076/AA72; 4C076/BB21;  
 4C076/BB25; 4C076/BB32; 4C086/BC17; 4C206/CA03; 4C206/CA11;  
 4C206/CA17; 4C206/CA18; 4C206/CA19; 4C076/CC01; 4C076/CC04;  
 4C076/CC10; 4C076/CC14; 4C076/CC16; 4C076/CC17; 4C076/CC18;  
 4C076/CC19; 4C076/CC21; 4C076/CC29; 4C076/CC31; 4C206/DA19;

4C086/DA31; 4C076/DD26.Z; 4C076/DD37.S; 4C076/DD39.S; 4C076/DD40.S;  
 4C076/DD41.S; 4C076/DD43.S; 4C076/DD45.S; 4C076/DD49.S; 4C076/DD59.S;  
 4C076/DD60.S; 4C076/DD63.D; 4C076/DD70; 4C076/DD70.S; 4C076/EE03.G;  
 4C076/EE06.G; 4C076/EE10.G; 4C076/EE11.G; 4C076/EE16.G; 4C076/EE23.G;  
 4C076/EE26.G; 4C076/EE30.G; 4C076/EE31.G; 4C076/EE32.G; 4C076/EE37.G;  
 4C076/EE41.G; 4C076/EE42.G; 4C206/FA42; 4C076/FF17; 4C076/FF51;  
 4C076/FF61; 4C206/KA01; 4C086/MA03; 4C206/MA03; 4C084/MA05;  
 4C086/MA05; 4C206/MA05; 4C086/MA07; 4C086/MA08; 4C086/MA09;  
 4C086/MA10; 4C206/MA12; 4C084/MA13; 4C086/MA13; 4C084/MA24;  
 4C086/MA24; 4C206/MA28; 4C206/MA29; 4C084/MA32; 4C086/MA32;  
 4C206/MA33; 4C206/MA44; 4C206/MA52; 4C084/MA56; 4C086/MA56;  
 4C084/MA59; 4C086/MA59; 4C084/MA63; 4C086/MA63; 4C206/MA76;  
 4C206/MA79; 4C206/MA83; 4C084/NA10; 4C086/NA10; 4C206/NA10;  
 4C084/NA11; 4C086/NA11; 4C206/NA11; 4C086/ZA06; 4C206/ZA06;  
 4C084/ZA06.2; 4C086/ZA08; 4C206/ZA08; 4C084/ZA08.2; 4C086/ZA33;  
 4C206/ZA33; 4C084/ZA33.2; 4C086/ZA34; 4C206/ZA34; 4C084/ZA34.2;  
 4C086/ZA51; 4C206/ZA51; 4C084/ZA51.2; 4C086/ZA59; 4C206/ZA59;  
 4C084/ZA59.2; 4C086/ZA66; 4C206/ZA66; 4C084/ZA66.2; 4C086/ZA75;  
 4C206/ZA75; 4C084/ZA75.2; 4C086/ZA81; 4C206/ZA81; 4C084/ZA81.2;  
 4C086/ZA89; 4C206/ZA89; 4C084/ZA89.2; 4C086/ZA90; 4C206/ZA90;  
 4C084/ZA90.2; 4C086/ZA94; 4C206/ZA94; 4C084/ZA94.2; 4C086/ZA96;  
 4C206/ZA96; 4C084/ZA96.2; 4C086/ZB11; 4C206/ZB11; 4C084/ZB11.2;  
 4C086/ZB15; 4C206/ZB15; 4C084/ZB15.2; 4C086/ZB35; 4C206/ZB35;  
 4C084/ZB35.2; 4C086/ZC21; 4C206/ZC21; 4C084/ZC21.2

AB WO 2001001963 A1 UPAB: 20090928

NOVELTY - A method for controlling the flux of penetrants across an adaptable semi-permeable porous barrier is new.

DETAILED DESCRIPTION - A method for controlling the flux of penetrants across an adaptable semi-permeable membrane comprises suspending the penetrants in a polar liquid in the form of fluid droplets surrounds by a membrane-like coating comprising at least two kinds of amphiphilic substances with a tendency to aggregate, selecting a dose of the penetrants to control the flux of the penetrants across the barrier and applying the selected dose of the formulation onto the area of the barrier. The amphiphilic substances differ by a factor of at least 10 in solubility in the polar liquid and the homo-aggregates of the more soluble substance and hetero-aggregates have a preferred average diameter smaller than the diameter of the homo-aggregates of the less soluble substance. The more soluble substance tends to solubilize the droplet and comprises up to 99% of the solubilizing concentration or saturating concentration in the unstabilized droplet. The presence of the more soluble substance lowers the average elastic energy of the coating by at least 5 times preferably more than 10 times the average elastic energy of red blood cells or of phospholipid bilayers with fluid aliphatic chains. The penetrants are able to transport agents through the pores of the barrier or enable agent permeation through the pores after the penetrants have entered the pores.

INDEPENDENT CLAIMS are included for:

- (i) a kit containing the formulation;
- (ii) a patch containing the formulation; and
- (iii) a method of administering an agent to a mammalian body or plant comprising the novel method.

USE - The method is useful for administering an agent to a mammalian body or a plant, for generating an immune response by vaccinating the mammal and for treating inflammatory disease, dermatosis, kidney or liver failure, adrenal insufficiency, aspiration syndrome, Behcet syndrome, bites and stings, blood disorders (cold-hemagglutinin disease), hemolytic anaemia, hyper eosinophilic, hypoplastic anaemia, macroglobulinaemia, thrombocytopenic purpura, bone disorders, cerebral oedema, Cogan's syndrome, congenital adrenal hyperplasia, connective tissue disorders (lichen, lupus erythematosus, polymyalgia rheumatica, polymyositis and dermatomyositis), epilepsy, eye disorders (cataracts), Graves' ophthalmopathy, hemangioma,

herpes infections, neuropathies, retinal vasculitis, scleritis, gastro-intestinal disorders (inflammatory bowel disease, nausea and oesophageal damage), hypercalcaemia, infections, Kawasaki disease, myasthenia gravis, pain syndromes, polynuropathies, pancreatitis, respiratory disorders (asthma), rheumatoid disease, osteoarthritis, rhinitis, sarcoidosis, skin diseases, alopecia, eczema, erythema multiforme, lichen, pemphigus and pemphigoid, psoriasis, pyoderma gangrenosum, urticaria and thyroid and vascular disorders.

ADVANTAGE - Increasing the applied dose above a threshold level affects both the drug/penetrant distribution and also determines the rate of penetrant transport across the barrier.

TECH PHARMACEUTICALS - Preferred Composition: The flux is increased by enlarging the applied dose per area of the penetrants and the pH of the composition is preferably 3 to 10, especially 5 to 8. The formulation preferably comprises a thickening agent to raise the viscosity to maximally 5 Nm/s, especially 0.2Nm/s, an antioxidant to reduce the increase of oxidation index to less than 100% per 6 months, preferably 50% per 12 months and/or a microbicide to reduce the bacterial count after 4 days, preferably after 1 day, to less than 100/g for aerobic bacteria, less than 10 for entero-bacteria and less than 1 for *Pseudomonas aeruginosa* or *Staphylococcus aureus*. At least one microbicide is added in an amount that reduces the bacterial count of 1 million germs added per gram of total mass of the formulation after a period of 3 days and preferably after a period of 1 day. The thickening agent is selected from the class of pharmaceutically acceptable hydrophilic polymers, such as partially etherified cellulose derivatives, like carboxymethyl-, hydroxyethyl-, hydroxypropyl-, hydroxypropylmethyl- or methyl-cellulose; completely synthetic hydrophilic polymers such as polyacrylates, polymethacrylates, poly(hydroxyethyl)-, poly(hydroxypropyl)-, poly(hydroxypropylmethyl)methacrylates, polyacrylonitriles, methallyl-sulfonates, polyethylenes, polyoxyethylenes, polyethylene glycols, polyethylene glycol-lactides, polyethylene glycol-diacylates, polyvinylpyrrolidones, polyvinyl alcohols, poly(propylmethacrylimides), poly(propylene fumarate-co-ethylene glycols), poloxamers, polyaspartamides, (hydrazine cross-linked) hyaluronic acids, silicones; natural gums comprising alginates, carrageenans, guar-gums, gelatins, tragacanth, (amidated) pectins, xanthans, chitosan collagens, agaroses; mixtures and further derivatives or co-polymers of them and / or other pharmaceutically, or at least biologically, acceptable polymers. The concentration of the polymer is in the range between 0.01 w-% and 10 w-%, more preferably in the range between 0.1 w-% and 5 w-%, even more preferably in the range between 0.25 w-% and 3.5 w-% and most preferably in the range between 0.5 w-% and 2 w-%. The anti-oxidant is selected from synthetic phenolic anti-oxidants, such as butylated hydroxyanisol (BHA), butylated hydroxytoluene (BHT) and di-tert-butylphenol (LY 178002, LY256548, HWA- 13 1, BF-389, Cl-986, PD- 127443, E-5 119, BI-L-239XX, etc.), tertiary butylhydroquinone (TBHQ), propyl gallate (PG), 1 -0-hexy)-2,3,5-trimethylhydroquinone (HTHQ); aromatic amines (such as diphenylamine, p-alkylthio-o-anisidine, ethylenediamine derivatives, carbazol, tetrahydroindenoindol); phenols and phenolic acids (such as gualacol, hydroquinone, vanillin, gallic acids and their esters, protocatechuic acid, quinic acid, syringic acid, ellagic acid, salicylic acid, nordihydroguaiaretic acid (NDGA), eugenol; tocopherols (including tocopherols (alpha, beta, gamma, delta) and their derivatives, such as tocopheryl-acylate (e.g.

-acetate, -laurate, myristate, -palmitate, -oleate, Aioleate, etc., or any other suitable tocopheryl-lipoate), tocopheryl-POE-succinate; trolox and corresponding amide- and thiocarboxamide analogues; ascorbic acid and its salts, isoascorbate, (2 or 3 or 6)-o-alkylascorbic acids, ascorbyl esters (e.g. 6-o-lauroyl, myristoyl, paimitoyl-, oleoyl, or linoleoyl-L-ascorbic acid, etc.); non-steroidal anti-inflammatory agents (NSAIDs), such as indomethacin, diclofenac, mefenamic acid, flufenamic acid, phenylbutazone, oxyphenbutazone acetylsalicylic acid, naproxen, diflunisal, ibuprofen, ketoprofen, piroxicam, penicillamine, penicillamine disulphide, primaquine, quinacrine, chloroquine, hydroxychloroquine, azathioprine, phenobarbital, acetaminophen); aminosalicylic acids and derivatives; methotrexate, probucol, antiarrhythmic agents (e.g. amiodarone, aprindine, asocainol), ambroxol, tamoxifen, b-hydroxytamoxifen; calcium antagonists (such as nifedipine, nisoldipine, nimodipine, nicardipine, nilvadipine), beta-receptor blockers (e.g. atenolol, propranolol, nebivolol); sodium bisulphite, sodium metabisulphite, thiourea; chelating agents, such as EDTA, GDTA, desferral; endogenous defence systems, such as transferrin, lactoferrin, ferritin, ceruloplasmin, haptoglobin, haemopexin, albumin, glucose, ubiquinol- 10; enzymatic antioxidants, such as superoxide dismutase and metal complexes with a similar activity, including catalase, glutathione peroxidase, and less complex molecules, such as beta-carotene, bilirubin, uric acid; flavonoids (e.g. flavones, flavonols, flavonones, flavanols, chalcones, anthocyanins), N-acetylcysteine, mesna, glutathione, thiohistidine derivatives, triazoles; tannines, cinnamic acid, hydroxycinnamic acids and their esters (e.g. coumaric acids and esters, caffeic acid and their esters, ferulic acid, (iso-) chlorogenic acid, sinapic acid); spice extracts (e.g. from clove, cinnamon, sage, rosemary, mace, oregano, allspice, nutmeg); carnosic acid, camosol, carsolic acid; rosmarinic acid, rosmarindiphenol, gentisic acid, ferulic acid; oat flour extracts, such as avenanthramide 1 and 2; thioethers, dithioethers, sulfoxides, tetraalkylthiuram disulphides; phytic acid, steroid derivatives (e.g. U74066F); tryptophan metabolites (e.g. 3-hydroxykynurenine, 3-hydroxyanthranilic acid), and organochalcogenides, or else is an oxidation suppressing enzyme. The concentration of BHA or BHT is between 0.001 and 2 w-% and especially between 0.005 and 0.02 w-%; of TBHQ and PG is between 0.001 and 2 w-%, most preferably is between 0.01 and 0.02 w-%; of tocopherols is between 0.005 and 5 w-%, most preferably is between 0.05 and 0.075 w-%; of ascorbic acid esters is between 0.001 and 5, most preferably is between 0.01 and 0.15 w-%; of ascorbic acid is between 0.001 and 5, most preferably is between 0.01 and 0.1 w-% of sodium bisulphite or sodium metabisulphite is between 0.001 and 5, most preferably is between 0.01 -0.15 w-%; of thiourea is between 0.0001 and 2 w-% and most preferably is between 0.001-0.01 w-% most typically 0.005 w-%; of cysteine is between 0.01 and 5, most typically 0.5 w-%; of monothioglycerol is between 0.01 and 5 w-%, most typically 0.5 w-%; of NDGA is between 0.0005-2 w-% most typically 0.01 w-%; of glutathione is between 0.005 and 5 w-%, most typically 0.1 w-%; of EDTA is between 0.001 and 5 w-%, most typically between 0.05 and 0.975 w-%; of citric acid is between 0.001 and 5 w-%, most typically between 0.3 and 2 w-%.

The microbicide is selected from short chain alcohols, such as ethyl and isopropyl alcohol, chlorbutanol, benzyl alcohol, chlorbenzyl alcohol, dichlorbenzylalcohol; hexachlorophene; phenolic compounds, such as cresol, 4-chloro-m-cresol, p-chloro-m-xylenol, dichlorophene, hexachlorophene, povidon-iodine; parabens, especially alkyl-paraben, such as methyl-, ethyl-, propyl-, or butyl-paraben, benzyl-paraben;



acids, such as sorbic acid, benzoic acid and its salts; quaternary ammonium compounds, such as alkonium salts, e.g. benzalkonium salts, especially the chlorides or bromides, cetrimonium salts, e.g. the bromide; phenoalkeciniurn salt, such as phenododecinium bromide, cetylpyridinium chloride or other such salts; mercurium compounds, such as phenylmercuric acetate, borate, or nitrate, thiomersal; chlorhexidine or its gluconate; antibiotically active compounds of biological origin, or a mixture of it.

The bulk concentration of short chain alcohols in the case of ethyl, propyl, butyl or benzyl alcohol is up to 10 w-%, most preferably is in the range between 0.3-3 w-% and in the case of chlorobutanol is in the range between 0.3-0.6 w-% bulk concentration of parabens, especially in the case of methyl paraben is in the range between 0.05-0.2 w-% and in the case of propyl paraben is in the range between 0.002-0.02 w-% bulk concentration of sorbic acid is in the range between 0.05-0.2 w-% and in the case of benzoic acid is in the range between 0.1-0.5 w-% bulk concentration of phenols, triclosan, is in the range between 0.1-0.3 w-% and bulk concentration of chlorhexidine is in the range between 0.01-0.05 w-%.

The bulk concentration of short chain alcohols in the case of ethyl, propyl, butyl or benzyl alcohol is up to 10 w-%, most preferably is in the range between 0.3-3 w-% and in the case of chlorobutanol is in the range between 0.3-0.6 w-% bulk concentration of parabens, especially in the case of methyl paraben is in the range between 0.05-0.2 w-% and in the case of propyl paraben is in the range between 0.002-0.02 w-% bulk concentration of sorbic acid is in the range between 0.05-0.2 w-% and in the case of benzoic acid is in the range between 0.1-0.5 w-% bulk concentration of phenols, triclosan, is in the range between 0.1-0.3 w-% and bulk concentration of chlorhexidine is in the range between 0.01-0.05 w-%.

The less soluble amongst the aggregating substances is a lipid or lipid-like material, especially a polar lipid, whereas the substance which is more soluble in the suspending liquid and which lowers the average elastic energy of the droplet is a surfactant or else has surfactant-like properties and / or is a form of said lipid or lipid-like material which is comparably as soluble as said surfactant or the surfactant-like material.

The lipid or lipid-like material is a lipid or a lipid from a biological source or a corresponding synthetic lipid or any of its modifications, the lipid preferably belonging to the class of pure phospholipids corresponding to the general formula where R1 and R2 is an aliphatic chain, typically a C10-20 acyl, or -alkyl or partly unsaturated fatty acid residue, in particular, an oleoyl-, palmitoleoyl-, elaidoyl-, linoleyl-, linolenyl-, linolenoyl-, arachidoyl-, vaccinylyl-, lauroyl-, myristoyl-, palmitoyl-, or stearoyl chain; and where R3 is hydrogen, 2-trimethylamino-1-ethyl 2-amino-1-ethyl, C1-4-alkyl, C1-5-alkyl substituted with carboxy, C2-5-alkyl substituted with hydroxy, C2-5-alkyl substituted with carboxy and hydroxy, or C2-5 alkyl substituted with carboxy and amino, inositol, sphingosine, or salts of said substances, said lipid comprising also glycerides, isoprenoid lipids, steroids, sterines or sterols, of sulphur- or carbohydrate-containing lipids, or any other bilayer-forming lipids, in particular half-protonated fluid fatty acids, said lipid is selected from the group comprising phosphatidylcholines, phosphatidylethanolamines, phosphatidylglycerols, phosphatidylinositols, phosphatidic acids, phosphatidylserines, sphingomyelins or other sphingophospholipids, glycosphingolipids (including cerebrosides, ceramidepolyhexosides, sulphatides, sphingoplasmalogens), gangliosides and other glycolipids or synthetic lipids, in particular with corresponding sphingosine

derivatives, or any other glycolipids, whereby two similar or different chains can be ester-groups-linked to the backbone (as in diacyl and dialkenoyl compound) of be attached to the backbone with ether bonds, as in dialkyl-lipids.

The surfactant or surfactant-like material is a nonionic, a zwitterionic, an anionic or a cationic surfactant, especially a fatty-acid or -alcohol, an alkyl-trimethylammonium salt, an alkylsulphate salt, a monovalent salt of cholate, deoxycholate, glycocholate, glycodeoxycholate, taurodeoxycholate, taurocholate, etc., an acyl- or alkanoyl-dimethyl- aminoxide, esp. a dodecyl-dimethyl-aminoxide, an alkyl- or alkanoyl-N-methylglucamide, N-alkyl-NN- dimethylglycine, 3-(acyldimethylammonio)-alkanesulphonate, N-acyl- sulphobetaine, a polyethylene-glycol-octylphenyl ether, esp. a nonaethylene- glycol-octylphenyl ether, a polyethylene-acyl ether, esp. a nonaethylenedodecyl ether, a polyethylene-glycol-isoacyl ether, esp. a octaethylene-glycol-isotridecyl ether, polyethylene-acyl ether, esp. octaethylenedodecyl ether, polyethylene- glycol-sorbitane-acyl ester, such as polyethylenglykol-20-monolaurate (Tween 20) or polyethylenglykol-20-sorbitan-monooleate (Tween 80), a polyhydroxyethylene- acyl ether, esp. polyhydroxyethylene- lauryl, -myristoyl, -cetylstearyl, or -oleoyl ether, as in polyhydroxyethylene-4 or 6 or 8 or 10 or 12, etc., -lauryl ether (as in Brij series), or in the corresponding ester, e.g. of polyhydroxyethylen-8-stearate (Myd 45), -laurate or -oleate type, or in polyethoxylated castor oil 40, a sorbitane- monoalkylate (e.g. in Arlacel or Span), esp. sorbitane-monolaurate, an acyl- or alkanoyl-N-methylglucamide, esp. in or decanoyl- or dodecanoyl-N-methylglucamide, an alkyl-sulphate (salt), e.g. in lauryl- or oleoyl-sulphate, sodium deoxycholate, sodium glycodeoxycholate, sodium oleate, sodium taurate, a fatty acid salt, such as sodium elaidate, sodium linoleate, sodium laurate, a lysophospholipid, such as n-octadecylene(=oleoyl)-glycerophosphatidic acid, -phosphorylglycerol, or -phosphorylserine, n-acyl-, e.g. lauryl or oleoyl-glycero- phosphatidic acid, -phosphorylglycerol, or -phosphorylserine, n-tetradecyl- glycero-phosphatidic acid, -phosphorylglycerol, or - phosphorylserine, a corresponding palmitoeloyl, elaidoyl-, vaccenyl-lysophospholipid or a corresponding short-chain phospholipid, or else a surface-active polypeptide.

The average diameter of the penetrant is preferably 30 to 500 nm, especially 60 to 150 nm and the total dry weight of the droplets is preferably 0.01 to 40%, especially 0.5 to 20%, of the formulation. The total dry weight of droplets in a formulation is selected to increase the formulation viscosity to maximally 200 mPas, especially up to 8 mPas. At least one amphiphilic substance and/or at least one edgeactive substance or surfactant, and/or at least one hydrophilic fluid and the agent are mixed, if required separately, to form a solution, the resulting mixtures or solutions are then combined subsequently to induce, preferably by action of mechanical energy such as shaking, stirring, vibrations, homogenisation, ultrasonication, shearing, freezing and thawing, or filtration using convenient driving pressure, the formation of penetrants that associate with and/or incorporate the agent. The amphiphilic substances are dissolved in volatile solvents, such as alcohols, especially ethanol, or in other pharmaceutically acceptable organic solvents, such as ethanol, 1- and 2-propanol, benzyl alcohol, propylene glycol, polyethylene glycol or glycerol, other pharmaceutically acceptable organic solvents, such as undercooled gas, especially supercritical carbon dioxide, which are then removed, especially by evaporation or dilution, prior to making the final preparation. The formation of the penetrants may be induced by the addition of required substances into a fluid phase, evaporation

from a reverse phase, by injection or dialysis, if necessary under the influence of mechanical stress, such as shaking, stirring, in especially high velocity stirring, vibrating, homogenising, ultrasonication, shearing, freezing and thawing, or filtration using convenient, in especially low (1 MPa) or intermediate (up to 10 MPa), driving pressure. The formation of the penetrants may be induced by filtration, the filtering material having pores sized between 0.01microm and 0.8 microm, especially between 0.05 microm and 0.15 microm, where several filters may be used sequentially or in parallel. The agents and penetrants are made to associate, at least partly after the formation of the penetrants, e.g. after injecting a solution of the drug in a pharmaceutically acceptable fluid, such as ethanol, 1- and 2-propanol, benzyl alcohol, propylene glycol, polyethylene glycol or glycerol into the suspending medium and simultaneously with penetrant formation, if required using the drug co-solution and at least some, penetrant ingredients. The penetrants, with which the agent is associated, are prepared immediately before the application of the formulation, if convenient, from a suitable concentrate or a lyophilisate.

**Preferred Kit:** The kit comprises a device for administering a formulation contained in a bottle or any other packaging vessel.

**Preferred Patch:** The patch comprises a non-occlusive backing liner and an inner liner, where the backing liner and the inner liner define a reservoir and/or a matrix layer. The non-occlusive backing liner exhibits a mean vapor transmission rate (MVTR) of more than 1000 g/m squared day, preferably of more than 10.000 g/M squared day and has pores of smaller than 100 nm, preferably of smaller than 30 nm. The non-occlusive backing liner comprises a polyurethane membrane, preferably a polyester track-etched porous membrane, more preferably a polycarbonate track-etched porous membrane and most preferably a polyethylene microporous membrane. The inner liner prevents unwanted release of the formulation from the patch during storage and enables rapid skin wetting when contacted with the skin. The inner liner comprises a homogeneous membrane, preferably a polyester track-etched porous membrane or a polycarbonate track- etched. The membranes have a pore density of up to 5%, most preferably of more than 25% and/or a pore size in the range between 20 nm and 200 nm, most preferably between 80 nm and 120 nm. The inner liner comprises a hydrophobic mesh-membrane and/or a nonwoven fleece with mesh openings formed by hydrophobic threads. The inner liner comprises a microporous polyethylene membrane having average pore sizes in the range of between 50 nm to 3000 nm, especially of about 1500 nm.

The patch comprises a pressure sensitive adhesive layer, preferably an adhesive layer comprising polyacrylate, polyisobutylene, silicone, ethylene vinyl acetate copolymer, polyvinylpyrrolidone or polyethylene oxide hydrogel. The formulation viscosity is up to maximally 200 mPas, especially up to 8 mPas. The patch comprises one or more additional layers comprising desiccant containing layers, matrix layers, foam tape layers and/or protective layers. The patch comprises at least two compartments, which are separated from each other during storage. At least one of the compartments is inside and/or outside the patch. The formulation and/or the individual formulation components and/or the agent and/or the suspension/dispersion of penetrants without the agent are kept during the storage in several, preferably less than 5, especially in 2 separate compartments of the patch which, in case, are combined prior to or during or after the application of the patch. The outer compartment(s) comprise(s) injection systems, which are connected to the reservoir. The compartments are inside the reservoir, which is defined by the backing liner and the inner liner. The compartments are vertically stacked and /or are arranged side-by-side

and / or one compartment is included in a second compartment, preferably without being fixed to the second compartment. The compartments are separated from each other by a controllably openable barrier, preferably a membrane and/or by a plug and/or by a compartment-forming lamination. Combining and mixing of the ingredients of the compartments is achieved by direct mechanical action, such as pressing, rubbing, kneading, twisting, tearing and /or indirectly by changing the temperature, osmotic pressure or electrical potential.

ABEX ADMINISTRATION - The formulation is applied by spraying, smearing, rolling or sponging on the application area, in particular by using a metering sprayer, spender, roller, sponge or a non-occlusive patch, as appropriate. The barrier is a part of a mammalian body and / or a plant and preferably is skin and / or at least partly keratinised endothelium and / or nasal or any other mucosa. The area dose of the penetrant is between 0.1 mg per square centimetre (mg cm<sup>-2</sup>) and 40 mg cm<sup>-2</sup>, even more preferably is between 0.5 mg cm<sup>-2</sup> and 15 mg cm<sup>-2</sup> in case the penetrant is applied on the skin and/or the at least partly keratinised endothelium. The area dose of the penetrant is between 0.05 mg cm<sup>-2</sup> and 20 mg cm<sup>-2</sup>, even more preferably is between 0.5 mg cm<sup>-2</sup> and 10 mg cm<sup>-2</sup> in case the penetrant is applied on the nasal or other mucosa. The area dose of the penetrant is between 0.0001 (mg cm<sup>-2</sup>) and 0.1 mg cm<sup>-2</sup>, even more preferably is between 0.001 mg cm<sup>-2</sup> and 0.01 mg cm<sup>-2</sup> in case the penetrant is applied on plant body, plant leaves or plant needles (all claimed).

EXAMPLE - Droplets were made by mixing phosphatidylcholine from soy bean (87.4mg), sodium cholate (12.6mg) and pH 7.3 phosphate buffer (0.9ml) with a trace amount of 3H-DPPC. Various layers of skin were stripped and the proportion of the dose present was assessed. With 1.5 or 3.0µg applied lipid 13 to 16% of the dose penetrated to viable skin, whereas with 0.1µg applied lipid only 7% of the dose penetrated.

FS CPI; GMPI

MC CPI: A12-V01; B03-H; B04-B01B; B04-C02; B04-C03; B04-N02; B05-B01P; B10-A22; B10-B04A; B10-C03; B10-C04; B10-D01; B10-E02; B10-E04; B12-M02D; B12-M02F; B12-M09; B14-A01; B14-S08; B14-S11; D05-A02A; D05-H07; D08-B09A

L97 ANSWER 20 OF 24 WPIX COPYRIGHT 2010 THOMSON REUTERS on STN

AN 1995-117844 [199516] WPIX Full-text

DNC C1995-053523 [199516]

TI Food preservative for addition to meat or fish paste - comprises bacteriocin obtd. from *Pediococcus* organisms and e.g. organic acid, aminoacid(s), alcohol, antibacterial peptide etc.

DC D12; D13; D16

IN YAJIMA M

PA (ASAM-N) ASAMA KASEI KK

CYC 1

PI JP 07039356 A 19950210 (199516)\* JA 8[0]

<--

JP 3040282 B2 20000515 (200028) JA 7

<--

ADT JP 07039356 A JP 1993-206925 19930730; JP 3040282 B2 JP 1993-206925 19930730

FDT JP 3040282 B2 Previous Publ JP 07039356 A

FRAI JP 1993-206925 19930730

IPCR A23B0004-14 [I,A]; A23B0004-14 [I,C]; A23L0003-3463 [I,C]; A23L0003-3472 [I,A]; A23L0003-349 [I,A]; A23L0003-3508 [I,A]; A23L0003-3517 [I,A]; A23L0003-3526 [I,A]; A23L0003-3562 [I,A]; C12P0001-04 [I,A]; C12P0001-04 [I,C]; C12P0021-00 [I,A]; C12P0021-00

[I,C]; C12R0001-01 [N,A]

FCL A23B0004-14 Z; A23L0003-3472; A23L0003-349; A23L0003-349 501; A23L0003-3508; A23L0003-3517; A23L0003-3526 501; A23L0003-3562; C12P0001-04; C12P0001-04 A; C12P0021-00; C12P0021-00 A

Index: C12R0001:01

FTRM 4B012; 4B021; 4B064; 4B065; 4B064/AG01; 4B064/CA02; 4B064/DA02; 4B064/DA10; 4B021/LW02; 4B021/LW03; 4B021/LW04; 4B021/MC01; 4B021/MC02; 4B021/MC03; 4B021/MC07; 4B021/MK02; 4B021/MK05; 4B021/MK06; 4B021/MK07; 4B021/MK17; 4B021/MK18; 4B021/MK20; 4B021/MK21; 4B021/MK23; 4B021/MK24; 4B021/MK28; 4B021/MP01

AB JP 07039356 A UPAB: 20050824

Food preservatives consists of (1) bacteriocin produced from *Pediococcus* gp. and (2) one or more of (a) organic acid and its salts; (b) fatty acid esters of polybasic alcohols; (c) aminoacids; (d) antibacterial peptide, or protein; (e) polysaccharides of sugar, saccharic acid, and amino sugar and their partly decomposed cpds.; (f) spices, and their purified oil, or their plant; and/or (g) alcohol. Pref. (a) is formic acid, acetic acid, propionic acid, valeric acid, lactic acid, citric acid, tartaric acid, malic acid, fumaric acid, oxalic acid, succinic acid, adipic acid, pyruvic acid, glutaric acid, sorbic acid, or laurylsulphuric acid and their salts. (b) is propylene glycol fatty acid ester, glycerine fatty acid ester, sucrose fatty acid ester, and/or fatty acid polyglycerine ester. (c) is glycine, alanine, cystine, threonine, valine, lysine, and/or arginine. (d) is protamine, lysozyme and/or polylysine. (e) is pectin, oligo-galacturonic acid, galacturonic acid, and/or chitosan. (f) is antibacterial spices (e.g. rosemary or mace), cinnamic acid, ferulic acid, caffeic acid, Hinok-thiol, Moosodake (bamboo) extract, and/or tea polyphenols. (g) is propylene glycol and/or ethanol.

USE - Food preservatives are added to meat or fish paste. - In an example, pediocin AcH produced from *Pediococcus acidilactici* H (0.1%), sodium acetate (0.5%), and lactic acid (0.5%) were added to a meat paste (1000g) containing onion (300g), flour (60g), and water (50g), formed into hamburgers and preserved at 25 deg.C for almost 12 days with no change in odour, colour and taste.

FS CPI

MC CPI: D02-A03A; D02-A03B; D03-H01Q; D03-H02E; D05-C

L97 ANSWER 21 OF 24 WPIX COPYRIGHT 2010 THOMSON REUTERS on STN

AN 1995-117843 [199516] WPIX Full-text

DNC C1995-053522 [199516]

TI Food preservative for addition to fish- or meat-paste - comprises bacteriocin obtd. from *Lactococcus lactis* and at least one of e.g. organic acid, aminoacid, alcohol(s) etc.

DC D12; D13; D16

IN KANDA T; YAJIMA M

PA (ASAM-N) ASAMA KASEI KK; (LIOY-C) LION CORP

CYC 1

PI JP 07039355 A 19950210 (199516)\* JA 7[0]

<--

JP 3042573 B2 20000515 (200028) JA 7

<--

ADT JP 07039355 A JP 1993-206924 19930730; JP 3042573 B2 JP 1993-206924 19930730

FDT JP 3042573 B2 Previous Publ JP 07039355 A

FR1 JP 1993-206924 19930730

IPCR A23B0004-14 [I,A]; A23B0004-14 [I,C]; A23L0003-3463 [I,C]; A23L0003-3472 [I,A]; A23L0003-349 [I,A]; A23L0003-3508 [I,A]; A23L0003-3526 [I,A]; A23L0003-3562 [I,A]; C12P0001-04 [I,A]; C12P0001-04 [I,C]; C12P0021-00 [I,A]; C12P0021-00 [I,C]; C12R0001-00 [N,A]; C12R0001-225 [N,A]

FCL A23B0004-14 Z; A23L0003-3472; A23L0003-349; A23L0003-349 501;

A23L0003-3508; A23L0003-3526 501; A23L0003-3562; C12P0001-04;  
 C12P0001-04 A; C12P0021-00; C12P0021-00 A  
 Index: C12R0001:00; C12R0001:225

FTRM 4B012; 4B021; 4B064; 4B065; 4B064/AG01; 4B064/CA02; 4B064/DA02;  
 4B064/DA10; 4B021/LW02; 4B021/LW03; 4B021/LW04; 4B021/MC01;  
 4B021/MC02; 4B021/MC03; 4B021/MC07; 4B021/MK02; 4B021/MK05;  
 4B021/MK06; 4B021/MK07; 4B021/MK17; 4B021/MK18; 4B021/MK20;  
 4B021/MK23; 4B021/MK24; 4B021/MK28; 4B021/MP01

AB JP 07039355 A UPAB: 20050824

Food preservatives consists of (1) bacteriocin produced from *Lactococcus lactis*; and (2) one or more of (a) organic acid and its salts, (b) amino acid; (c) antibacterial peptide or protein; (d) polysaccharides of sugar, saccharic acid, and amino sugar, and its partly decomposed cpds.; (e) spices, and their purified oil, or their paints, and/or (f) alcohols.

Pref. (a) is formic acid, acetic acid, propionic acid, valeric acid, lactic acid, citric acid, tartaric acid, malic acid, fumaric acid, oxalic acid, succinic acid, adipic acid, pyruvic acid, glutaric acid, sorbic acid, or lauryl-sulphuric acid, and their salts. (b) is glycine, alanine, cystine, threonine, valine, lysine and/or arginine. (c) is protamine, and its decomposed cpds., lysozyme, and/or polylysine. (d) is pectin, oligo-galacturonic acid, galacturonic acid and/or chitosan. (e) is antibacterial spices (e.g. rosemary or mace), cinnamic acid, ferulic acid, caffeic acid, Hinoki-thiol, Moosodake (bamboo) extract, and/or tea polyphenols. (f) is propylene glycol and/or ethanol.

USE - Food preservative is added to meat paste, or fish paste. - In an example nisin produced from *Lactococcus lactis* subsp. *lactis* (0.1%), and sodium acetate (0.5%) were added to a paste of meat (1,000g), containing onion (300g), flour (60g) and water (50g), formed into hamburgers, steamed for 25 minutes, and preserved at 25 deg.C for 8 days, with no change in odour, taste and colour.

FS CPI  
 MC CPI: D02-A03A; D02-A03B; D03-H01Q; D03-H02E; D05-C

=> d 22-24 ibib abs ind

L97 ANSWER 22 OF 24 SCISEARCH COPYRIGHT (c) 2010 The Thomson Corporation on STN

ACCESSION NUMBER: 2010:262196 SCISEARCH Full-text  
 THE GENUINE ARTICLE: 559RV  
 TITLE: Colon-specific devices based on methacrylic functionalized Tween monomer networks: Swelling studies and in vitro drug release

AUTHOR: Muzzalupo, Rita (Reprint)  
 CORPORATE SOURCE: Univ Calabria, Dept Pharmaceut Sci, Edificio Polifunzionale, I-87036 Cosenza, Italy (Reprint)  
 E-mail: rita.muzzalupo@unical.it

AUTHOR: Muzzalupo, Rita (Reprint); Tavano, Lorena; Cassano, Roberta; Trombino, Sonia; Cilea, Alessia; Picci, Nevio  
 CORPORATE SOURCE: Univ Calabria, Dept Pharmaceut Sci, I-87036 Cosenza, Italy  
 E-mail: rita.muzzalupo@unical.it

COUNTRY OF AUTHOR: Italy  
 SOURCE: EUROPEAN POLYMER JOURNAL, (FEB 2010) Vol. 46, No. 2, pp. 209-216.  
 ISSN: 0014-3057.

PUBLISHER: PERGAMON-ELSEVIER SCIENCE LTD, THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, ENGLAND.

DOCUMENT TYPE: Article; Journal  
 LANGUAGE: English

REFERENCE COUNT: 36  
 ENTRY DATE: Entered STN: 12 Mar 2010  
 Last Updated on STN: 12 Mar 2010

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB Colon-targeted delivery devices based on methacrylic functionalized Tween monomer networks, useful for 5-FU or Ferulic acid site-specific release, were synthesized. The basic design consists of methacrylic functionalized Tween monomer-based networks prepared with or without acrylic acid as co-monomer. The swelling behaviour and loaded drugs release from these gels was studied as a function of pH. The devices showed a strong pH-dependent swelling behaviour, allowing a maximum release at pH 7.4. The acrylic acid introduction increased the polymeric gels pores size, as evidenced by the loading efficiency increase, but also reduced the amount of released drug in basic media compared to analogous network not containing the co-monomer. This behaviour, already found in the matrix swelling, could be attributed to a slower hydrolysis kinetics of the ester bond in functionalized Tween monomers, which implies a reduced ability to absorb water from a basic medium, resulting in a lower capacity to release the loaded drug. Since our device possesses a maximum drug release in the media at pH 7.4, it could be used for colon-targeted drug delivery of both 5-FU and Ferulic acid.. (C) 2009 Elsevier Ltd. All rights reserved.

CC POLYMER SCIENCE

ST Author Keywords: Tween; Acrylic acid; Polymeric networks; Release; 5-FU; Ferulic acid

STP Keywords Plus (R): DELIVERY-SYSTEMS; CHITOSAN MICROSPHERES; HYDROGELS; PECTIN; 5-FLUOROURACIL; ABSORPTION; MATRICES; CARRIER; ACID; TIME

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

L97 ANSWER 23 OF 24 SCISEARCH COPYRIGHT (c) 2010 The Thomson Corporation on STN

ACCESSION NUMBER: 2008:960855 SCISEARCH Full-text

THE GENUINE ARTICLE: 327HY

TITLE: Physical and oxidative stability of fish oil-in-water emulsions stabilized with beta-lactoglobulin and pectin

AUTHOR: Decker, Eric A. (Reprint)

CORPORATE SOURCE: Univ Massachusetts, Dept Food Sci, Amherst, MA 01003 USA (Reprint)

AUTHOR: Katsuda, Marly S.; McClements, D. J.; Miglioranza, Lucia H. S.

CORPORATE SOURCE: Univ Estadual Londrina, Dept Ciencia & Tecnol Alimentos, Londrina, PR, Brazil  
 E-mail: edecker@foodsci.umass.edu

COUNTRY OF AUTHOR: USA; Brazil

SOURCE: JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY, (23 JUL 2008) Vol. 56, No. 14, pp. 5926-5931.  
 ISSN: 0021-8561.

PUBLISHER: AMER CHEMICAL SOC, 1155 16TH ST, NW, WASHINGTON, DC 20036 USA.

DOCUMENT TYPE: Article; Journal

LANGUAGE: English

REFERENCE COUNT: 34

ENTRY DATE: Entered STN: 7 Aug 2008

Last Updated on STN: 7 Aug 2008

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB The oxidation of fatty acids can be inhibited by engineering the surface of oil-in-water emulsion droplets to decrease interactions between aqueous phase prooxidants and lipids. The objective of this research

was to evaluate whether emulsions stabilized by a multilayer emulsifier systems consisting of beta-lactoglobulin and citrus or sugar beet pectin could produce fish oil-in-water emulsions that had good physical and oxidative stability. Sugar beet pectin was compared to citrus pectin because the sugar beet pectin contains the known antioxidant, ferulic acid. A primary Menhaden oil-in-water emulsion was prepared with beta-lactoglobulin upon which the pectins were electrostatically deposited at pH 3.5. Emulsions prepared with 1% oil, 0.05% beta-lactoglobulin, and 0.06% pectins were physically stable for up to 16 days. As determined by monitoring lipid hydroperoxide and headspace propanal formation, emulsions prepared with the multilayer system of P-lactoglobulin and citrus pectin were more stable than emulsions stabilized with P-lactoglobulin alone. Emulsions prepared with the multilayer system of beta-lactoglobulin and sugar beet pectin were less stable than emulsions stabilized with beta-lactoglobulin alone despite the presence of ferulic acid in the sugar beet pectin. The lower oxidative stability of the emulsions with the sugar beet pectin could be due to its higher iron and copper concentrations which would produce oxidative stress that would overcome the antioxidant capacity of ferulic acid. These data suggest that the oxidative stability of oil-in-water emulsions containing omega-3 fatty acids could be improved by the use of multilayer emulsion systems containing pectins with low metal concentrations.

CC AGRICULTURE, MULTIDISCIPLINARY; CHEMISTRY, APPLIED; FOOD SCIENCE & TECHNOLOGY

ST Author Keywords: omega-3 fatty acids; lipid oxidation; citrus pectin; sugar beet pectin; antioxidants; ferulic acid; emulsions; beta-lactoglobulin

STP Keywords Plus (R): LECITHIN-CHITOSAN MEMBRANES; LIPID OXIDATION; ENVIRONMENTAL-STRESSES; O/W EMULSIONS; FERULIC ACID; DROPLETS; SYSTEMS; PROTEIN; CASEIN; IMPACT  
\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

L97 ANSWER 24 OF 24 SCISEARCH COPYRIGHT (c) 2010 The Thomson Corporation on STN

ACCESSION NUMBER: 2006:776020 SCISEARCH [Full-text](#)

THE GENUINE ARTICLE: 069W0

TITLE: Adsorption of bile acid by chitosan salts prepared with cinnamic acid and analogue compounds  
Murata Y (Reprint)

AUTHOR: Hokuriku Univ, Fac Pharmaceut Sci, Ho 3, Kanagawa Machi, Kanazawa, Ishikawa 9201181, Japan (Reprint)

AUTHOR: Nagaki K; Kofuji K; Sanae F; Kontani H; Kawashima S  
CORPORATE SOURCE: Hokuriku Univ, Fac Pharmaceut Sci, Kanazawa, Ishikawa 9201181, Japan

E-mail: y-murata@hokuriku-u.ac.jp

COUNTRY OF AUTHOR: Japan

SOURCE: JOURNAL OF BIOMATERIALS SCIENCE-POLYMER EDITION, (2006 Vol. 17, No. 7, pp. 781-789.  
ISSN: 0920-5063.

PUBLISHER: VSP BV, BRILL ACADEMIC PUBLISHERS, PO BOX 9000, 2300 PA LEIDEN, NETHERLANDS.

DOCUMENT TYPE: Article; Journal

LANGUAGE: English

REFERENCE COUNT: 15

ENTRY DATE: Entered STN: 24 Aug 2006  
Last Updated on STN: 24 Aug 2006

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB A chitosan (CS) powder treated with cinnamic acid and an analogue compound (CN) was prepared as CS-CN. Using it, bile acid adsorption by CS-CN and the release of CN were investigated in vitro. When CS-CN was



soaked in a taurocholate solution, it released CN and simultaneously adsorbed the bile acid. For CS-CN prepared with cinnamic acid, the amount of CN released was  $0.286 \pm 0.001$  mmol/g CS-CN; the amount of taurocholate adsorbed was  $0.284 \pm 0.003$  mmol/g CS-CN. These two functions were recognized on alginate or pectin gel beads containing CS-CN. The amount of released CN was altered extensively by the species of CN used for gel-bead preparation. Results suggest that CS-CN is a candidate for complementary medicine to prevent lifestyle-related diseases.

CC ENGINEERING, BIOMEDICAL; MATERIALS SCIENCE, BIOMATERIALS; POLYMER SCIENCE

ST Author Keywords: chitosan; cinnamic acid; bile acid adsorption; lifestyle-related disease

STP KeyWords Plus (R): ROSMARINIC ACID; FERULIC ACID; DERIVATIVES

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

=> d his nofile

(FILE 'HOME' ENTERED AT 11:37:57 ON 07 JUL 2010)

FILE 'HCAPLUS' ENTERED AT 11:38:12 ON 07 JUL 2010

L1 1 SEA SPE=ON ABB=ON PLU=ON US20070166437/PN  
SEL RN

FILE 'REGISTRY' ENTERED AT 11:38:23 ON 07 JUL 2010

L2 16 SEA SPE=ON ABB=ON PLU=ON (121-33-5/BI OR 9012-76-4/BI  
OR 11042-64-1/BI OR 1135-24-6/BI OR 117628-88-3/BI OR  
134633-83-3/BI OR 4046-02-0/BI OR 50-99-7/BI OR 7722-84-1/B  
I OR 83-46-5/BI OR 83589-62-2/BI OR 90-05-1/BI OR 9000-69-5  
/BI OR 9001-37-0/BI OR 9001-62-1/BI OR 9003-99-0/BI)  
L3 1 SEA SPE=ON ABB=ON PLU=ON 9012-76-4/RN  
L4 2829 SEA SPE=ON ABB=ON PLU=ON CHITOSAN?/CNS  
L5 1 SEA SPE=ON ABB=ON PLU=ON 9000-69-5/RN  
L6 2739 SEA SPE=ON ABB=ON PLU=ON PECTIN?/CNS  
E VANILLIN/CN  
L7 1 SEA SPE=ON ABB=ON PLU=ON VANILLIN/CN  
E VANILLIN?/CNS  
L8 544 SEA SPE=ON ABB=ON PLU=ON VANILLIN?/CNS  
L9 1 SEA SPE=ON ABB=ON PLU=ON 1135-24-6/RN  
L10 5 SEA SPE=ON ABB=ON PLU=ON FERULOYL?/CNS  
L11 344 SEA SPE=ON ABB=ON PLU=ON FERULOYL?/CNS  
L12 1 SEA SPE=ON ABB=ON PLU=ON LIPID/CN  
L13 3714 SEA SPE=ON ABB=ON PLU=ON LIPID?/CNS

FILE 'HCAPLUS' ENTERED AT 11:56:58 ON 07 JUL 2010

L14 35719 SEA SPE=ON ABB=ON PLU=ON L3  
L15 39846 SEA SPE=ON ABB=ON PLU=ON L4  
L16 20965 SEA SPE=ON ABB=ON PLU=ON L5  
L17 37946 SEA SPE=ON ABB=ON PLU=ON L6  
L18 15643 SEA SPE=ON ABB=ON PLU=ON L7  
L19 26952 SEA SPE=ON ABB=ON PLU=ON L8  
L20 10437 SEA SPE=ON ABB=ON PLU=ON L9 OR L10  
L21 2611 SEA SPE=ON ABB=ON PLU=ON L11  
L22 0 SEA SPE=ON ABB=ON PLU=ON L12  
L23 56086 SEA SPE=ON ABB=ON PLU=ON L13  
L24 QUE SPE=ON ABB=ON PLU=ON LIPID? OR FAT# OR OIL# OR WAX?  
L25 QUE SPE=ON ABB=ON PLU=ON FERULOYL? OR  
FERULIC ACID?  
L26 QUE SPE=ON ABB=ON PLU=ON PECTIN#  
L27 QUE SPE=ON ABB=ON PLU=ON CHITOSAN#  
L28 88735 SEA SPE=ON ABB=ON PLU=ON (L14 OR L15 OR L16 OR L17) OR  
(L26 OR L27)  
L29 244 SEA SPE=ON ABB=ON PLU=ON L28 AND (L18 OR L19)  
L30 240 SEA SPE=ON ABB=ON PLU=ON L28 AND VANILLIN?  
L31 283 SEA SPE=ON ABB=ON PLU=ON (L29 OR L30)  
L32 44 SEA SPE=ON ABB=ON PLU=ON L31 AND ((L20 OR L21) OR L25)  
L33 8 SEA SPE=ON ABB=ON PLU=ON L32 AND (L23 OR L24)  
L34 11 SEA SPE=ON ABB=ON PLU=ON L32 AND FOOD?/SC, SX  
L35 2 SEA SPE=ON ABB=ON PLU=ON L33 AND FOOD?/SC, SX  
L36 1 SEA SPE=ON ABB=ON PLU=ON L35 AND L1  
L37 11 SEA SPE=ON ABB=ON PLU=ON L34 OR L35  
L38 91 SEA SPE=ON ABB=ON PLU=ON L31 AND FOOD?/SC, SX  
L39 67 SEA SPE=ON ABB=ON PLU=ON L38 AND FFD/RL  
L40 QUE SPE=ON ABB=ON PLU=ON (EDIBLE OR EAT? OR CONSUM?) (3A)

(FILM? OR BARRIER? OR ?LAYER?)

L41 2 SEA SPE=ON ABB=ON PLU=ON L39 AND L40  
 L42 33 SEA SPE=ON ABB=ON PLU=ON L32 NOT (L37 OR L41)  
 L43 0 SEA SPE=ON ABB=ON PLU=ON L42 AND FFD/RL  
 L44 9 SEA SPE=ON ABB=ON PLU=ON L37 AND (1840-2004)/PRY,AY,PY  
 L45 390 SEA SPE=ON ABB=ON PLU=ON L28 AND ((L20 OR L21) OR L25)  
 L46 143 SEA SPE=ON ABB=ON PLU=ON L45 AND FOOD?/SC, SX  
 L47 3 SEA SPE=ON ABB=ON PLU=ON L46 AND L40  
 L48 66 SEA SPE=ON ABB=ON PLU=ON L46 AND FFD/RL  
 L49 54 SEA SPE=ON ABB=ON PLU=ON L48 AND FOOD?/SC  
 L50 21 SEA SPE=ON ABB=ON PLU=ON L49 AND (L23 OR L24)  
 L51 20 SEA SPE=ON ABB=ON PLU=ON L50 AND (L16 OR L17)  
 L52 6 SEA SPE=ON ABB=ON PLU=ON L51 AND (L14 OR L15)  
 L53 6 SEA SPE=ON ABB=ON PLU=ON L52 AND (1840-2004)/PRY,AY,PY  
 L54 13 SEA SPE=ON ABB=ON PLU=ON L44 OR L53  
 L55 1609 SEA SPE=ON ABB=ON PLU=ON L26 AND L27  
 L56 12 SEA SPE=ON ABB=ON PLU=ON L55 AND L25  
 L57 8 SEA SPE=ON ABB=ON PLU=ON L56 AND FOOD?/SC, SX  
 L58 6 SEA SPE=ON ABB=ON PLU=ON L57 AND (1840-2004)/PRY,AY,PY  
 L59 13 SEA SPE=ON ABB=ON PLU=ON L54 OR L58  
 L60 1767 SEA SPE=ON ABB=ON PLU=ON PECTIN? AND CHITOSAN?  
 L61 14 SEA SPE=ON ABB=ON PLU=ON L60 AND (FERUOYL? OR FERULOYL?  
 OR FERULIC?)  
 L62 6 SEA SPE=ON ABB=ON PLU=ON L61 AND VANILLIN?  
 L63 5 SEA SPE=ON ABB=ON PLU=ON L62 AND (1840-2004)/PRY,AY,PY  
 L64 15 SEA SPE=ON ABB=ON PLU=ON L59 OR L63

FILE 'WPIX' ENTERED AT 12:36:15 ON 07 JUL 2010

L65 14 SEA SPE=ON ABB=ON PLU=ON L60 AND (FERUOYL? OR FERULOYL?  
 OR FERULIC?)  
 L66 6 SEA SPE=ON ABB=ON PLU=ON L65 AND (PY<=2004 OR AY<=2004  
 OR PRY<=2004)

FILE 'JAPIO' ENTERED AT 12:37:45 ON 07 JUL 2010

L67 0 SEA SPE=ON ABB=ON PLU=ON L65 AND (PY<=2004 OR AY<=2004  
 OR PRY<=2004)

FILE 'FROSTI' ENTERED AT 12:38:01 ON 07 JUL 2010

L68 0 SEA SPE=ON ABB=ON PLU=ON L65 AND (PY<=2004 OR AY<=2004  
 OR PRY<=2004)

FILE 'AGRICOLA' ENTERED AT 12:38:38 ON 07 JUL 2010

L69 0 SEA SPE=ON ABB=ON PLU=ON L65 AND (PY<=2004 OR AY<=2004  
 OR PRY<=2004)

FILE 'PASCAL' ENTERED AT 12:39:02 ON 07 JUL 2010

L70 0 SEA SPE=ON ABB=ON PLU=ON L60 AND (FERUOYL? OR FERULOYL?  
 OR FERULIC?)

FILE 'BIOSIS' ENTERED AT 12:39:20 ON 07 JUL 2010

L71 0 SEA SPE=ON ABB=ON PLU=ON L60 AND (FERUOYL? OR FERULOYL?  
 OR FERULIC?)

FILE 'DISSABS' ENTERED AT 12:39:44 ON 07 JUL 2010

L72 0 SEA SPE=ON ABB=ON PLU=ON L60 AND (FERUOYL? OR FERULOYL?  
 OR FERULIC?)

FILE 'SCISEARCH' ENTERED AT 12:40:00 ON 07 JUL 2010

L73 3 SEA SPE=ON ABB=ON PLU=ON L60 AND (FERUOYL? OR FERULOYL?  
 OR FERULIC?)

FILE 'CONFSCI' ENTERED AT 12:40:37 ON 07 JUL 2010  
 L74 0 SEA SPE=ON ABB=ON PLU=ON L60 AND (FERUOYL? OR FERULOYL?  
 OR FERULIC?)  
 L75 QUE SPE=ON ABB=ON PLU=ON FERUOYL? OR FERULOYL? OR  
 FERULIC? OR FERULAT?  
 L76 0 SEA SPE=ON ABB=ON PLU=ON PECTIN? AND L75  
 L77 0 SEA SPE=ON ABB=ON PLU=ON CHITOSAN? AND VANILLIN?  
 L78 0 SEA SPE=ON ABB=ON PLU=ON L74 OR (L76 OR L77)

FILE 'SCISEARCH' ENTERED AT 13:27:56 ON 07 JUL 2010  
 L79 135 SEA SPE=ON ABB=ON PLU=ON PECTIN? AND L75  
 L80 14 SEA SPE=ON ABB=ON PLU=ON CHITOSAN? AND VANILLIN?  
 L81 0 SEA SPE=ON ABB=ON PLU=ON L79 AND L80  
 L82 3 SEA SPE=ON ABB=ON PLU=ON L73 OR L81

FILE 'DISSABS' ENTERED AT 13:28:58 ON 07 JUL 2010  
 L83 0 SEA SPE=ON ABB=ON PLU=ON L79 AND L80  
 L84 0 SEA SPE=ON ABB=ON PLU=ON L83 OR L72

FILE 'BIOSIS' ENTERED AT 13:29:26 ON 07 JUL 2010  
 L85 0 SEA SPE=ON ABB=ON PLU=ON L79 AND L80  
 L86 0 SEA SPE=ON ABB=ON PLU=ON L85 OR L71

FILE 'PASCAL' ENTERED AT 13:29:52 ON 07 JUL 2010  
 L87 0 SEA SPE=ON ABB=ON PLU=ON L79 AND L80  
 L88 0 SEA SPE=ON ABB=ON PLU=ON L87 OR L70

FILE 'AGRICOLA' ENTERED AT 13:30:29 ON 07 JUL 2010  
 L89 0 SEA SPE=ON ABB=ON PLU=ON L79 AND L80  
 L90 0 SEA SPE=ON ABB=ON PLU=ON L69 OR L89

FILE 'FROSTI' ENTERED AT 13:30:55 ON 07 JUL 2010  
 L91 0 SEA SPE=ON ABB=ON PLU=ON L79 AND L80  
 L92 0 SEA SPE=ON ABB=ON PLU=ON L68 OR L91

FILE 'JAPIO' ENTERED AT 13:31:22 ON 07 JUL 2010  
 L93 0 SEA SPE=ON ABB=ON PLU=ON L79 AND L80  
 L94 0 SEA SPE=ON ABB=ON PLU=ON L67 OR L93

FILE 'WPIX' ENTERED AT 13:31:44 ON 07 JUL 2010  
 L95 3 SEA SPE=ON ABB=ON PLU=ON L79 AND L80  
 L96 7 SEA SPE=ON ABB=ON PLU=ON L66 OR L95

FILE 'HCAPLUS, WPIX, SCISEARCH' ENTERED AT 13:34:36 ON 07 JUL 2010  
 L97 24 DUP REM L64 L96 L94 L92 L90 L88 L86 L84 L82 L78 (1 DUPLICAT  
 ANSWERS '1-15' FROM FILE HCAPLUS  
 ANSWERS '16-21' FROM FILE WPIX  
 ANSWERS '22-24' FROM FILE SCISEARCH